UNIVERSITY OF SANTA CLARA

Founded, 1851

Catalogue 1957-58
Announcements 1958-59

University of Santa Clara

COLLEGE OF ARTS AND SCIENCES

This College offers major courses in the Departments of Economics, English, History, Philosophy, Political Science, Spanish, Biology, Chemistry and Physics leading to the Bachelor's degree.

COLLEGE OF BUSINESS ADMINISTRATION

A four year course leading to the degree of Bachelor of Science in Commerce.

Evening Division: Selected Courses in Business Administration offered for college credit but not leading to a degree.

COLLEGE OF ENGINEERING

Four year courses in Civil, Electrical and Mechanical Engineering.

COLLEGE OF LAW

A three-year full time day law program leading to the degree of Bachelor of Laws.

GRADUATE DIVISION

Program leading to Master of Arts degree in English and History, and Master of Science degree in Chemistry.

TEACHER EDUCATION

Program leading to General Secondary Credential.

The catalogue of the University is dated for the academic year in progress at the time of printing because it records the faculty, students, and courses for that year. It also carries the date of the academic year following publication because the calendar and announcements are for that year. This catalogue published during the Academic Year 1957-58, carries prominently on its cover the date of the calendar and announcements 1958-59.

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Santa Clara, California

ARCHIVES OF
THE UNIVERSITY OF
SANTA CLARA

MAP OF THE UNIVERSITY OF SANTA CLARA

University of Santa Clara

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University of Santa Clara
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Lafayette St.

James Walsh Hall

E. McLaughlin Hall

Service Bldg.

Nobili Hall

Montgomery Laboratory

Auditorium

Observatory

Varsi Library

Adobe Lodge

Engr. Labs.

Tennis Courts

Ricard

Santa Clara Mission

Seifert Gymnasium

Infirm.

Faculty Residence

O'Connor Hall

Santa Clara St.

Alviso St.

Franklin St.

Kenna Hall

D. Walsh Admin. Bldg.

de Saisset Museum

Chemistry Labs.

Science Hall

Bergin Hall

Grant St.

To mould men after the model of the Man-God, and thus form them to serve their fellowmen, their country and their God; this is the ideal and the purpose of the University of

Santa Clara.

University of Santa Clara

ANNOUNCEMENTS, 1958 - 1959

●

CATALOGUE

for the

ONE HUNDRED AND SEVENTH YEAR

1957-1958

●

Member National Catholic Educational Association
Member Jesuit Educational Association
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Accredited by Engineering Council for Professional Development
Approved by the American Bar Association
Member Association of American Law Schools
Approved by the American Medical Association
Accredited by the State Bar of California
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Collegiate Schools of Business Administration
Conference of Jesuit Law Schools
Member of Western Conference of Law Schools

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PUBLISHED ANNUALLY DURING MARCH BY
THE UNIVERSITY OF SANTA CLARA
SANTA CLARA, CALIFORNIA

MARCH, 1958

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OF SANTA CLARA COLLEGE

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CHARLES JOSEPH DIRKSEN
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Librarian

WILLIAM JOHN LOFTUS
Comptroller

EDWARD ALEXANDER AMARAL, M.D.
Director of Student Health

UNIVERSITY OF SANTA CLARA
CALENDAR*

1958

September

S	M	T	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Sept. 12: Registration of Freshmen.
Sept. 13-15: Freshmen Orientation.
Sept. 15: General Registration for Fall Semester (Sophomore, Junior, Senior, Law and Graduate Students).
Sept. 16: Instruction begins.
Sept. 19: Field Competitions at 3:30 p.m.

October

S	M	T	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Oct. 1: Last day for filing application for candidacy for the master's degree to be conferred in January, 1959.
Oct. 2: Mass of the Holy Ghost, a class day.
Oct. 13-17: First Student Evaluation Period (not required in the College of Law).
Oct. 20: Last day for Seniors to file candidacy for graduation in June, 1959.
Oct. 23-24: Annual Retreat.
Oct. 25: Holiday after Retreat Mass.

November

S	M	T	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

Nov. 1: All Saints Day—academic and administrative holiday.
Nov. 11: Annual Memorial Mass, a class day.
Nov. 20-26: Second Student Evaluation Period.
Nov. 26: Thanksgiving Recess begins at 12:00 Noon.

December

S	M	T	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Dec. 1: Classes resume.
Dec. 5: Announcement of Prize Contests.
Dec. 8: Feast of the Immaculate Conception—academic and administrative holiday.
Dec. 15: Last day for filing with the Graduate Committee the final draft of theses for the master's degree to be conferred in January, 1959.
Dec. 19-Jan. 4: Christmas Recess begins.

1959

January

S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Jan. 5: Classes resume.
Jan. 9: Last day to submit pre-registration forms.
Jan. 19-23: Semester examinations.
Jan. 20: Last day for fulfilling Foreign Language requirement for master's degree.
Jan. 24-Feb. 1: Inter-Semester Recess.

***All dates are inclusive dates.**

UNIVERSITY OF SANTA CLARA
CALENDAR*

1959

February

S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

Feb. 2: Registration of Freshmen.
Feb. 3: General Registration (Sophomore, Junior, Senior, Law and Graduate Students).
Feb. 4: Instruction begins.
Feb. 11: Ash Wednesday.
Feb. 25: Last day for filing application for candidacy for the master's degree to be conferred in June, 1959.
Feb. 26: Owl Oratorical Contest.
Feb. 27: Last day to file for LL.B. degree, June, 1959.

March

S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Mar. 9-13: First Student Evaluation Period.
Mar. 16: Tryouts, Dramatic Art Contest.
Mar. 19: Founding Day—not a holiday.
Mar. 26-30: Easter Recess.
Mar. 31: Classes resume.

April

S	M	T	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

Apr. 20-24: Second Student Evaluation Period.
Apr. 27: Senior Thesis due.
Apr. 28: Ryland Debate.

May

S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

May 1-2: Graduate Record Examinations in College of Arts and Sciences.
May 4: Last day for filing with the Graduate Committee the final draft of theses for the master's degree to be conferred in June, 1959.
May 5: Dramatic Art Contest.
May 7: Ascension Thursday, a holiday.
May 8: Redwood and McCann Prize Essays and Shipsey Poem due.
May 13: President's Day, a holiday.
May 15: Last day to file pre-registration forms.
May 30: Memorial Day, a holiday.

June

S	M	T	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

June 1-5: Semester Examinations.
June 6: Homecoming Day.
June 13: 108th Commencement.

***All dates are inclusive dates.**

OFFICERS OF INSTRUCTION

▼

*WILSON ALBERT ALDRIDGE, S.J., Associate Professor
Latin and Speech
M.A., Gonzaga University, 1938; S.T.L., Alma College, 1944. Instructor in English and French, University of San Francisco, 1938-40; Instructor in Philosophy and Religion, University of San Francisco, 1945-46; Associate Professor in Philosophy and Religion, Loyola University at Los Angeles, 1946-47, 1950-54. At Santa Clara since 1954.

O. ROBERT ANDERSON, Professor
Business Administration
A.B., University of Washington, 1934. M.B.A., University of Washington, 1942. Instructor in Accounting, University of Oregon, 1937-41. C.P.A., State of Oregon, 1941. At Santa Clara since 1942.

LOUIS I. BANNAN, S.J., Assistant Professor
Education, Philosophy
M.A., Gonzaga University, 1938; S.T.L., Alma College, 1944. Instructor in Psychology, Loyola College, Baltimore, 1949; Assistant Professor in Education, Loyola University, Los Angeles, 1950-53. At Santa Clara since 1953.

FRANKLIN J. BARRY, M/Sgt.,
Military Science and Tactics
Instructor, Colorado College, Colorado Springs, Colorado, 1953-55. At Santa Clara since 1957.

JAMES MARIUS BECCHETTI, Assistant Professor
Business Law
A.B., University of Santa Clara, 1925; LL.B., University of Santa Clara, 1926. At Santa Clara since 1930.

ALBERT C. BEESON, Lecturer
Business Administration
A.B., Stanford University, 1928; M.B.A., New York University, 1931. Lecturer in Economics, New York Stock Exchange Institute, 1930-40. Lecturer in Corporate Finance and Investment, Newark Extension, Rutgers University, 1946. Lecturer in Industrial Management, Graduate School of Business, Stanford University, Summer, 1953. Lecturer in Business Administration, University of Santa Clara, 1953-54. At Santa Clara since 1956.

EDWIN ALANSON BEILHARZ, Professor
History
Director, Division of Social Studies; Chairman, Department of History.
A.B., Creighton University, 1931; M.A., University of Nebraska, 1934; Ph.D., University of California, 1951. University Fellowship in History, University of California, 1934-35; Emmanuel S. Heller Memorial Scholar in History, University of California, 1935-36. At Santa Clara since 1936.

*Indicates instructing on Los Gatos Campus.

MAURICE M. BELVAL, S.J., Instructor
Religion and Foreign Languages

A.B., Loyola University at Los Angeles, 1938; M.A. in Philosophy, Gonzaga University, 1944; B.S.T., College of Immaculate Conception, Montreal, Canada, 1950; M.A. in French, University of California at Los Angeles, 1954. At Santa Clara since 1952.

LOUIS FRANK BOITANO, Associate Professor
Business Administration

B.S.C., University of Santa Clara, 1947. C.P.A., State of California, 1947. At Santa Clara since 1947.

LLOYD LAWRENCE BOLTON, Professor
Biology

Chairman, Department of Biology.
B.A., University of British Columbia, 1922; M.A., University of British Columbia, 1924; Ph.D., Cornell University, 1932. Instructor in Biology, University of Saskatchewan, 1928-29. Instructor in Zoology, University of Washington, 1929-31. At Santa Clara since 1932.

EDWIN JOHN BROWN, Professor
Education, Academic Counselor

B.S., Kansas State Teachers College, 1922; M.A., Stanford University, 1925; Ph.D., Stanford University, 1928. Professorial lecturer, Michigan State Normal College, Summer, 1926; University of Oregon, Summer, 1927; Stanford University, Summers, 1928, 1933. Professor in Education and Dean of the Graduate School, Kansas State Teachers College, 1928-44. Professor in Education and Dean of University College, St. Louis University, 1944-50. Professor of Educational Administration, St. Louis University, 1950-51. Professorial lecturer, University of Colorado, Summers, 1937, 1939, 1941, 1946, 1947, 1948, 1949, 1950, 1952, 1953, 1954, 1955, 1956. At Santa Clara since 1951.

OWEN M. BROYLES, Lecturer
Business Administration

B.A., University of Nevada, 1927; M.A., University of California, Berkeley, 1930. Associate Professor in Economics. At Santa Clara since 1957.

JOSEPH S. BRUSHER, S.J., Professor
History

M.A., Gonzaga University, 1932; S.T.L., Alma College, 1939; Ph.D., St. Louis University, 1943. Associate Professor and Chairman of the Department of History, Loyola University, Los Angeles, 1950-57. At Santa Clara since 1957.

MICHAEL BUCKLEY, JR., Assistant Professor
Mathematics

B.S., United States Military Academy, 1923; M.S.E.E., Purdue University, 1933. At Santa Clara since 1955.

*WILLIAM G. BURMAN, S.J., Associate Professor
Latin, Greek, Music
M.A., Gonzaga University, 1937; S.T.L., Alma College, 1942; M.A., Classics, Harvard University, 1949. Instructor in Greek, University of Santa Clara, 1937-38; Instructor in Latin and Greek, University of Santa Clara, 1934-36. At Santa Clara since 1950.

WILLIAM J. CAHILL, S.J., Assistant Professor
Classics
A.B., Gonzaga University, 1931; M.A., Philosophy, Gonzaga University, 1932; S.T.L., Alma College, 1939; M.A., Classics, Stanford University, 1950. Instructor in Classics, University of Loyola, 1940-41. At Santa Clara since 1941.

MARC CALLAN, Lecturer
Business Administration
B.A., Gonzaga University, 1935; M.A., Gonzaga University, 1936; C.P.A., State of California, 1952. Instructor, Seattle University, 1936-37. At Santa Clara since 1956.

WILLIAM ARTHUR CARTER, Assistant Professor
Chemistry
B.S., University of San Francisco, 1942. Teaching Assistant, Department of Chemistry, Stanford University, 1942-44. At Santa Clara since 1946.

*DANIEL J. CHARLTON, S.J., Assistant Professor
Latin, Greek
M.A., Gonzaga University, 1937; S.T.L., Alma College, 1946; Ph.D., Harvard University, 1951. At Santa Clara since 1950.

PATRICIA J. COFFMAN, Assistant Professor
Law
LL.B., Cumberland University Law School, Lebanon, Tennessee, 1952; B.A. in Social Studies, Peabody College, Nashville, Tennessee, 1956. At Santa Clara since 1957.

WILFRED HENRY CROWLEY, S.J., Professor
Philosophy
M.A., Gonzaga University, 1932; S.T.L., Alma College, 1939. Instructor in English, University of Santa Clara, 1932-34. Instructor in Philosophy, Loyola University at Los Angeles, 1934-35. Instructor in Philosophy, University of Santa Clara, 1940-42. At Santa Clara since 1946.

JOSEPH F. DECK, Professor
Chemistry
Chairman, Department of Chemistry
A.B., St. Louis University, 1928; M.S., St. Louis University, 1930; Ph.D., University of Kansas, 1932. Graduate work, University of Michigan, 1929. Teaching Fellowship, University of Kansas, 1931-32. At Santa Clara since 1936.

* Indicates instructing on Los Gatos campus.

CORNELIUS FRANCIS DEENEY, S.J., Professor
Religion
A.B., Gonzaga University, 1904; M.A., 1905; Ph.D., Gregorian University, Rome, 1923. Instructor in English, University of Santa Clara, 1905-11. Dean of Studies, St. Ignatius College, 1915-16. Professor of Philosophy, Gonzaga University, 1917-19. Dean of Studies and Regent of Law School, Loyola University, Los Angeles, 1919-21. At Santa Clara since 1921.

CHARLES JOSEPH DIRKSEN, Professor
Business Administration
Dean of the College of Business Administration
B.S.C., St. Louis University, 1935; M.S.C., 1938. Instructor in Economics, St. Louis University, 1937-38. Graduate work, University of Illinois, 1936. Visiting Professor of Marketing at University of Tennessee, 1947. Visiting Professor of Marketing, University of San Francisco, 1948-50. Visiting Professor of Business Administration, Graduate School of Business Administration, Harvard University, 1953. Visiting Professor of Marketing, School of Business, University of California, Spring Semester, 1954-55. Visiting Professor of Marketing, School of Commerce, University of Southern California, Summer, 1954, 1955, 1956. At Santa Clara since 1938.

HUGH COLUMBUS DONAVON, S.J., Associate Professor
Religion
M.A., Gonzaga University, 1919. Instructor in English, University of Santa Clara, 1919-22. At Santa Clara since 1929.

JOHN BERNARD DRAHMANN, Associate Professor
Physics
Chairman, Department of Physics
B.S., St. John's University, Minnesota, 1943; Ph.D., St. Louis University, 1952. Teaching and Research Fellow, St. Louis University, 1947-51. Instructor in Physics, Seattle University, 1951-53. At Santa Clara since 1954.

JOHN DENIS DRYDEN, S.J., Assistant Professor
Economics
M.A., Gonzaga University, 1945; S.T.B., Alma College, 1953. Instructor in English, University of Santa Clara, 1945-48; Instructor in Economics, University of Santa Clara, 1955-56; Georgetown University, 1956-57. At Santa Clara since 1958.

STEPHEN BEAUPLAND EARLEY, S.J., Assistant Professor
Assistant Student Chaplain
Religion, Philosophy
M.A., Gonzaga University, 1939; S.T.L., Woodstock College, 1945. Instructor in English, University of San Francisco, 1939-42. Instructor in English, University of San Francisco, 1949-50. At Santa Clara since 1950.

AUSTIN JOSEPH FAGOTHEY, S.J., Professor
Philosophy
Chairman, Department of Philosophy.
M.A., Gonzaga University, 1924. Instructor in Greek and English, University of Santa Clara, 1926-27. Instructor in Philosophy, University of Santa Clara, 1932-34, 1935-36. Instructor in Theology, Alma College, 1936-38. At Santa Clara since 1938.

FRED P. FALTERSACK, Assistant
Engineering
A.B., San Jose State College, 1928. Assistant in Machine Shop, California Polytechnic, 1941-42. Supervisor in Machine Shop, University of California, Berkeley, 1943-46. At Santa Clara since 1949.

THOMAS N. FAST, Instructor
Biology
B.S., University of Santa Clara, 1949. Teaching Assistant in Biology, Stanford University, Winter and Spring, 1950, Summer, 1950, 1951, 1952, 1955. At Santa Clara since 1957.

ROBERT J. FEERICK
Director of Basketball, Physical Education
B.S., University of Santa Clara, 1941. At Santa Clara since 1950.

JOSEPH FELIPE
Assistant Basketball Coach, Director of Minor Sports.
B.S., Political Science, University of Santa Clara, 1940; Graduate work, University of California, 1941.

THOMAS FENYO, Instructor
Director of Music
B.S., New York University, 1950; M.A., University of California at Los Angeles, 1953; Ph.D., University of California at Los Angeles, 1956. Assistant, Department of Music, University of California at Los Angeles, 1953-56. At Santa Clara since 1956.

ISHMAEL M. FERRY, S.F.C.
Military Science and Tactics
At Santa Clara since 1955.

EUGENE JOHN FISHER, Instructor
Engineering
B.M.E., University of Santa Clara, 1950. Registered Engineer, State of California. At Santa Clara since 1954.

FRANCIS RICHARD FLAIM, Professor
Biology
A.B., University of Utah, 1936; M.A., 1938; Ph.D., Stanford University, 1956. Assistant in Zoology, University of Utah, 1934-35. Teaching Fellowship in Biology, University of Utah, 1935-38. At Santa Clara since 1938.

EDMUND CLARENCE FLYNN, Professor
Engineering
Chairman, Department of Civil Engineering
B.S. in C.E., Colorado College, 1919; M.S., Iowa State College, 1925. Asisstant Professor (Highway Engineering and allied subjects), Iowa State College, 1921-30. At Santa Clara since 1930.

THOMAS JOSEPH FLYNN, S.J., Assistant Professor
Philosophy
M.A., Gonzaga University, 1944; S.T.L., Alma College, 1951; Ph.D., Fordham University, 1956. Instructor in Philosophy, University of San Francisco, 1946-47. At Santa Clara since 1955.

JULIAN F. S. FOSTER, Instructor
Political Science
B.A., Oxford University, 1951; M.A., Oxford University, 1955. Tutor in Political Science, Oxford University, 1951-53. Visiting Lecturer in Political Science, University of Michigan, 1953-54. Teaching Assistant in Political Science, University of California, Los Angeles, 1954-57. At Santa Clara since 1957.

JOHN CLARKE GALVIN, Assistant Professor
Law
B.A., University of Tennessee, 1948; LL.B., St. Mary's University Law School, 1953; LL.M., New York University Law School, 1956. At Santa Clara since 1956.

MARTIN CHRISTOPHER GLAVINA, Assistant Professor
German - Italian
A.B., University of California, 1926; A.M., 1928. Teaching Assistant, University of California, 1923-24. At Santa Clara since 1930.

CLAUSIN D. HADLEY, Professor
Business Administration
B.S., University of Oregon, 1928; M.B.A., Stanford University, 1930; Ph.D., University of Wisconsin, 1937. Assistant Professor in Economics, Indiana University, 1937-43; Assistant Professor, Graduate School of Business, Stanford University, 1946-49. At Santa Clara since 1950.

CLARENCE L. HAM, Instructor
Business Administration, Economics
B.S., University of Wisconsin, 1947. At Santa Clara since 1955.

JAMES J. HANNAH, Assistant Professor
History
B.A., St. Paul's College, Washington, D.C., 1947; M.A., University of Nebraska, 1951; Ph.D., University of California, Berkeley, 1956. Teaching Assistant in History, University of California, Berkeley, 1954-56. Assistant Professor in History, University of Wyoming, 1956-57. At Santa Clara since 1957.

ROBERT EMMET HAYES, Professor
Law
A.B., Holy Cross College, 1926; LL.B., Boston College, 1933. Professor of Law, University of Santa Clara, 1934-46. At Santa Clara since 1953.

ROBERT W. HAYES, Instructor
Speech
B.A., Duquesne University, 1950; M.A., University of Hawaii, 1957. Graduate Assistant in Speech, University of Hawaii, 1955-57. Instructor in English, University of Hawaii, Spring, 1957. At Santa Clara since 1957.

CARL H. HAYN, S.J., Assistant Professor
Physics
A.B., Gonzaga University, 1939; A.M., Gonzaga University, 1940; S.T.L., Alma College, 1948; Ph.D., St. Louis University, 1955. Instructor of Physics, Loyola University at Los Angeles, 1943-44; Research Fellow, St. Louis University, 1953-54. At Santa Clara since 1955.

*JAMES E. HEALY, S.J., Assistant Professor
Religion
M.A., Gonzaga University, 1930. At Santa Clara since 1950.

OSCAR HERRGESEL, Lieutenant, Assistant Professor
Military Science and Tactics
B.A., San Jose State College, 1952. At Santa Clara since 1956.

IRWIN L. HIGGS, Lieutenant, Assistant Professor
Military Science and Tactics
A.B., University of Kentucky, 1952. At Santa Clara since 1956.

CHAUNCEY V. HILL, S.F.C.
Military Science and Tactics
At Santa Clara since 1957.

ABRAHAM P. HILLMAN, Assistant Professor
Mathematics
B.A., Brooklyn College, 1939; M.A., Brooklyn College, 1940; Ph. D., Princeton University, 1950. Instructor in Mathematics, Princeton, University, 1944-45. Instructor in Mathematics, Columbia University, 1950-56. Assistant Professor in Mathematics, State College of Washington, 1956-57. At Santa Clara since 1957.

FRED W. HISEY, Lecturer
Business Administration
At Santa Clara since 1957.

MYRON MITCHELS JACOBS, Assistant Professor
Engineering
B.S., University of California, 1949; M.S., 1951. Instructor in Civil Engineering, Ohio Northern University, 1952-53. At Santa Clara since 1953.

HENRY ALBERT JACOPI, Lecturer
Business Administration
At Santa Clara since 1954.

WILLIAM RALEY JAMES, Instructor
Dramatics, Public Speaking
B.A., University of Nevada, 1953; M.A., San Jose State College, 1956; Graduate Assistant in Drama, San Jose State College, 1955-56. At Santa Clara since 1956.

DONLAN FRANCIS JONES, Assistant Professor
Engineering
B.E.E., University of Santa Clara, 1952; M.S. in Engineering, University of California at Los Angeles, 1954. At Santa Clara since 1956.

ELIOT JONES, Professor
Business Administration
A.B., Vanderbilt, 1906; M.A., Harvard University, 1908; Ph.D., Harvard University, 1913. Instructor in Economics, Harvard University, 1912-13. Instructor in Economics, University of Pennsylvania, 1913-14. Associate Professor of Economics, Iowa State University, 1914-16. Professor of Economics, University of Texas, 1916-17. Professor of Economics, University of California, Summer Session, 1920, 1921, 1924. McKinley Professor of Public Utilities, University of Illinois,

*Indicates instructing on Los Gatos campus.

1924-25. Professor of Economics, University of Chicago, Summer Quarter, 1925; University of Michigan, Summer Quarter, 1933; Harvard University, Summer Session, 1936; University of Washington, Spring Quarter, 1949. Professor of Transportation, Stanford University, 1920-1952. At Santa Clara since 1952.

JOSEPH P. KELLY, Assistant Professor
Business Law
Ph.B., Holy Cross College, 1933; J.D., New York University, 1936; LL.M., 1939. At Santa Clara since 1939.

GEORGE V. KENNARD, S.J., Assistant Professor
Philosophy
A.B., St. Louis University, 1943; M.A., St. Louis University, 1949; S.T.L., Alma College, 1951. Instructor, Philosophy, Loyola University of Los Angeles, 1952-57. At Santa Clara since 1957.

FRANCIS J. KOENIG, S.J., Instructor
Chemistry
A.B., Gonzaga University, 1942; A.M., Gonzaga University, 1943; M.S., Saint Louis University, 1955; Ph.D., Saint Louis University, 1957. At Santa Clara since 1957.

WITOLD KRASSOWSKI, Instructor
Sociology
B.Sc., Purdue University, 1952; M.S., Purdue University, 1954. Graduate Assistant in Sociology, Purdue University, 1952-54. Teaching Assistant in Sociology, University of California, Los Angeles, 1954-56; Instructor in Sociology, Occidental College, 1957. At Santa Clara since 1957.

BERNARD LEWIS KRONICK, Associate Professor
Chairman, Department of Political Science
Political Science
A.B., University of California, 1937; Ph.D., University of California, 1953. Assistant Professor, Sacramento State College, 1947-50; Assistant Professor, San Francisco State College, 1950-51; Visiting lecturer, Occidental College, 1953-54; Lecturer, Winona State Teachers College, Summer, 1954; Assistant Professor, San Francisco State College, 1955-56. At Santa Clara since 1956.

*WALTER J. KROPP, S.J., Associate Professor
Associate Dean, Los Gatos Campus
M.A., Gonzaga University, 1931. Instructor in Greek, University of Santa Clara, 1949-50; Associate Professor of Classics and Chairman of the Department, Loyola University at Los Angeles, 1950-56. At Santa Clara since 1956.

JEAN B. LA MARRE, Major, Assistant Professor
Military Science and Tactics
B.S., United States Military Academy, 1944; M.S., University of California, 1949. At Santa Clara since 1956.

EMMRICH D. LAMB, JR., Sgt.
Military Science and Tactics
Ph.B., Creighton University, 1941. Assistant P.M.S.&T., Montana State University, Missoula, Montana. At Santa Clara since 1957.

WILFRED A. LEONARD
Director of Baseball
At Santa Clara since 1958.

* Indicates instructing on Los Gatos campus.

GORDON F. LEVY, Lecturer
Business Administration
B.A., Stanford University, 1949; M.B.A., Stanford University, 1951. At Santa Clara since 1955.

CHARLES W. LOGUE, Assistant Professor
English
A.B., St. John's University, Brooklyn, 1948; M.A., St. John's University, Brooklyn, 1949; Ph.D., St. John's University, Brooklyn, 1951. Associate Professor in English, Univeristy of Tampa, 1953-56. Assistant Professor in English, DePaul University, 1956-57. At Santa Clara since 1957.

THEODORE J. MACKIN, S.J., Instructor
Religion
B.A., Gonzaga University, 1946; M.A., Gonzaga University, 1948; S.T.L., Alma College, 1954; S.T.D., Potifical Gregorian University, Rome, 1958. Instructor of Philosophy and Classical Languages, University of San Francisco, 1947-50. At Santa Clara since 1958.

THOMAS J. MAHON, S.J., Associate Professor
Latin
Ph.D., Barcelona, 1919; S.T.D., Louvain, 1928. Pontifical Seminary of Buenos Aires, 1920-23. Jesuit Philosophical Faculty of Argentina, 1931-53. At Santa Clara since 1955.

FREDERICK M. MARTIN, Lecturer
Business Administration
B.A., San Jose State College, 1949; M.A., San Jose State College, 1950. Instructor, San Jose State College. At Santa Clara since 1958.

JOSEPH LAWRENCE MARTIN, S.J., Associate Professor
Religion
Chairman, Department of Religion.
B.S.C., University of Santa Clara, 1932; M.A., Gonzaga University, 1939. Instructor in Economic History and English, University of Santa Clara, 1939-40. At Santa Clara since 1947.

NORMAN F. MARTIN, S.J., Instructor
History
A.B. in Philosophy, Gonzaga University, 1941; M.A. in Philosophy, Gonzaga University, 1942; S.T.L., Colegio Maximo de San Miguel, Buenos Aires, 1948; M.A. in History, Mexico City College, Mexico, 1950; Doctor en Letras in History, National University of Mexico, 1957. Instructor in Latin, University of Santa Clara, 1942-43; Instructor in English and History, Colegio Centro America, Granada, Nicaragua, 1943-44; Instructor in English, Colegio San Bartolome, Bogota, Colombia, 1944-45. At Santa Clara since 1958.

WARREN P. McKENNEY, Professor
Law
Dean, College of Law
B.A., Brown University, 1935; LL.B., Fordham University Law School, 1940. Professor of Law, St. Mary's University Law School, 1948-55. Dean since 1955. At Santa Clara since 1955.

CHARLES A. McQUILLAN, S.J., Assistant Professor
Philosophy
B.A., Gonzaga University, 1926; M.A., Gonzaga University, 1927. Loyola University at Los Angeles, 1929-30, 1935-37. At Santa Clara since 1956.

*JOSEPH F. MEEHAN, S.J., Instructor
Latin
M.A., Gonzaga University, 1953; S.T.L., Alma College, 1950; S.T.D., Gregorian University, Rome, 1953. At Santa Clara since 1955.

ROBERT G. MEINERS, Assistant Professor
Law
A.B., Muhlenberg College, Pennsylvania, 1950; LL.B., Dickinson School of Law, 1956; LL.M., Harvard Law School, 1957. At Santa Clara since 1957.

ROBERT S. MILNE, Lieutenant, Assistant Professor
Military Science and Tactics
B.S., University of San Francisco, 1952. At Santa Clara since 1955.

JOSEPH FRANCIS X. MONASTA, Assistant Professor
Business Administration
A.B., St. Anselm College, 1936; M.B.A., Stanford University, 1948. At Santa Clara since 1948.

AUSTIN P. MORRIS, S.J., Instructor
Law
A.B., University of California, Berkeley, 1948; LL.B., University of California, Berkeley, 1950. At Santa Clara since 1957.

CHARLES EDWARD MOWRY, Assistant Professor
Physics
B.S. in E.E., University of California, 1923. Registered Engineer, California. At Santa Clara since 1957.

ROBERT I. MURRAY, Assistant Professor
Engineering
B.S., Stanford University, 1949; M.S., Stanford University, 1951. At Santa Clara since 1951.

HENRY P. NETTESHEIM, Associate Professor
Engineering
Chairman, Department of Electrical Engineering.
B.S. in E.E., University of Wisconsin, 1946. M.S., Stanford University, 1951. Registered Engineer, State of California. At Santa Clara since 1947.

PHILLIP L. OLSEN, Lecturer
Evening Division
A.B., Stanford University, 1941.

*JOHN J. O'NEILL, S.J., Instructor
Latin
A.B., Gonzaga University, 1949; M.A., Stanford University, 1956. Instructor in Classics, University of Santa Clara, 1950-52. At Santa Clara since 1957.

VINCENT J. O'SULLIVAN, S.J., Assistant Professor
Philosophy
M.A., in Philosophy, Gonzaga University, 1936; S.T.L., in Theology, Alma College, 1942; M.A., in Classics, St. Louis University, 1948. Instructor in English, Latin, Philsophy, Loyola University at Los Angeles, 1948-51. Dean, College of Arts and Sciences, Loyola University at Los Angeles, 1949-51. At Santa Clara since 1953.

*Indicates instructing on Los Gatos campus.

*FELTON G. O'TOOLE, S.J., Instructor
English
M.A., in Philosophy, Gonzaga University, 1941; M.A., in English, Fordham University, 1951. Instructor in English, Loyola University at Los Angeles, 1952-53. At Santa Clara since 1953.

EDWIN J. OWENS, Professor
Law
A.B., Holy Cross College, 1919; LL.B., Harvard, 1922; LL.D., University of Santa Clara, 1952. Professor of Law, Boston College, 1928-33. Dean of the College of Law, 1934-53. Visiting Professor of Law, Hastings College of Law, Summer, 1942. Visiting Professor of Law, Stanford Law School, Fall Quarter, 1945. At Santa Clara since 1934.

JOHN PAGANI, Professor
Business Administration
Chairman, Department of Economics
B.S.C., University of Santa Clara, 1932; Ph.D., Stanford University, 1951. Teaching Assistant in Economics, University of California, 1932-34; Assistant Professor, University of Santa Clara, 1934-46; Acting Instructor in Economics, Stanford University, 1941-42; Assistant Professor, Stanford University, 1946-52; Associate Professor, University of Utah, School of Business Administration, 1952-54. At Santa Clara since 1954.

ROBERT J. PARDEN, Professor
Engineering
Dean, College of Engineering
B.S.M.E., State University of Iowa, 1947; M.S., State University of Iowa, 1951; Ph.D., State University of Iowa, 1953. Associate Professor in Industrial Engineering, Illinois Institute of Technology, 1953-54. Registered Professional Engineer, State of Iowa and California. At Santa Clara since 1954.

RICHARD KRAMER PEFLEY, Associate Professor
Engineering
Chairman, Department of Mechanical Engineering
B.A. in M.E., Stanford University, 1944; M.S. in M.E., Stanford University, 1951. At Santa Clara since 1951.

JACK AUGUST PETERSON, Assistant Professor
Engineering
B.S. in E.E., University of Idaho, 1949; M.S. in E.E., University of Idaho, 1953. Assistant Professor in Electrical Engineering, Gonzaga University, 1950-54; Assistant Professor in Electrical Engineering, California State Polytechnic College, 1954-55. At Santa Clara since 1955.

ROBERT JOSEPH PFEIFFER, Instructor
Chemistry
B.S., University of Santa Clara, 1953; Ph.D. candidate, Cornell University, 1958. At Santa Clara, Fall, 1958.

GERALD J. PHELAN, S.J., Instructor
English
B.S., Loyola University at Los Angeles, 1950. At Santa Clara since 1956.

*Indicates instructing on Los Gatos campus.

ARTHUR N. PHELPS, Assistant Professor
Education
Director, Teacher Education Program
B.A., Canisius College, 1937; M.A., Canisius College, 1940; Ed.D., Columbia University, 1956. Instructor in Education, Canisius College, 1951-54. At Santa Clara since 1958.

JOSEPH J. POCIASK, S.J., Associate Professor
English
M.A., Gonzaga University, 1937; S.T.L., Alma College, 1943. At Santa Clara since 1948.

JOHN J. QUINN, Instructor
English
B.S., University of San Francisco, 1950; Ph.D., Stanford University, 1956. Assistant Instructor in English, Stanford University, Spring, 1951. Instructor in English, Stanford University, Autumn, 1953; Winter, 1954; Winter, 1955; Spring, 1955. At Santa Clara since 1957.

JAMES EDWARD RANSFORD, S.J., Lecturer
Chemistry
A.B., Gonzaga University, 1931; M.A., 1932; Fordham University, 1949-50. Instructor in Chemistry, University of Santa Clara, 1950-51. Graduate study, University of California, Davis, 1951-52. Assistant Professor in Chemistry, University of Santa Clara, 1952-53. At Santa Clara since 1957.

KARL A. RAVEN, Assistant Professor
Biology
B.A., University of Colorado, 1941; M.A., 1948. Assistant in Biology, University of Colorado, 1946-48. Assistant in Botany, University of California at Los Angeles, 1948-51. Research Associate, Saratoga Horticultural Foundation, 1951-53. At Santa Clara since 1953.

DAVID J. REINA, Sgt.
Military Science and Tactics
B.B.A., University of Washington, 1934. At Santa Clara since 1957.

HERMAN ROBERT ROESTI, Instructor
Business Administration
A.B., University of Santa Clara, 1942. Instructor in English and Speech, University of San Francisco, 1949-52. At Santa Clara since 1953.

ARTHUR FRANCIS RUTLEDGE, S.J., Instructor
Philosophy and Religion
B.A., Gonzaga University, 1944; M.A., Gonzaga University, 1945; S.T.B., Alma College, 1952. At Santa Clara since 1956.

WILLIAM DALE SAUERS, Instructor
Law
A.B., Fresno State College, 1949; LL.B., Stanford University, 1952. At Santa Clara since 1956.

RICHARD M. SCHMIDT, Assistant Professor
English
A.B., University of Santa Clara, 1935; M.A., University of Washington, 1945. Instructor, University of Santa Clara, 1941-42. Graduate work, University of Michigan, 1951-52. At Santa Clara since 1946.

ROBERT F. SHEA, Instructor
Dramatics and Public Speaking
B.A., Trinity College, 1938; M.A., University of South Dakota, 1953. Instructor of Speech and Director of Dramatics, University of Dayton, 1954-56. At Santa Clara since 1956.

WILLIAM F. SHEEHAN, JR., Assistant Professor
Chemistry
B.S., Loyola University of Chicago, 1948; Ph.D., California Institute of Technology, 1952. Graduate Assistant in Chemistry, California Institute of Technology, 1948-49. At Santa Clara since 1955.

WILLIAM M. SHIREY, Major, Assistant Professor
Military Science and Tactics
B.S., United States Military Academy, 1944. At Santa Clara since 1956.

ARTHUR E. SMOOT, Major, Assistant Professor
Military Science and Tactics
A.B., Lynchburg College, 1936. Assistant Professor of Military Science and Tactics, New Mexico College of Agriculture and Mechanic Arts, 1950-53. At Santa Clara since 1956.

FERDINAND J. SPIELER, S.J., Assistant Professor
Physics
M.A., Gonzaga University, 1935. Graduate work in Physics, Stanford University, 1942-43. At Santa Clara since 1943.

RICHARD JAMES STANEK, Assistant Professor
Psychology
B.S., Loyola University, Chicago, 1950; A.M., Loyola University, Chicago, 1953; Ph.D., Loyola University, Chicago, 1956. Instructor in Psychology, Palomar College, San Marcos, California, 1956-57; Instructor in Psychology, Oceanside-Carlsbad College, Oceanside, California, 1957-58. At Santa Clara, Fall, 1958.

GERHARDT EDWARD STEINKE, Assistant Professor
Languages
B.A., University of Chicago, 1939; M.A., Tulane University, 1942; Ph.D., Stanford University, 1954. Assistant Professor of German, Tulane University, 1940-42; Instructor of German and English, Sacramento Junior College, 1947-50; Assistant Professor, Stanford University, 1952-53. At Santa Clara since 1956.

IRVIN WILFORD STOWE, Instructor
Engineering
At Santa Clara since 1955.

GEORGE A. STRONG, Assistant Professor
Law
B.S., University of Notre Dame, 1944; M.A., University of California, 1952; LL.B., University of Santa Clara, 1955. Teaching fellowship in Economics, University of California, 1946-48; Instructor in Business Administration, University of Notre Dame, 1948-50; Instructor in Economics, St. Joseph's College, Indiana, 1950-52; Instructor in Economics, University of Santa Clara, 1953. At Santa Clara since 1955.

GEORGE LEONARD SULLIVAN, Professor
Engineering
Dean Emeritus
B.S. in M.E., University of Nebraska, 1908; M.E., University of Colorado, 1910; Ph.D., University of Santa Clara, 1914. Instructor in Mechanical Engineering, University of Colorado, 1908-11. Assistant Professor of Mechanical Engineering, Montana State College 1911-12. Dean, 1918-55. At Santa Clara since 1912.

IRVING SUSSMAN, Associate Professor
Mathematics
Chairman, Department of Mathematics
B.S., Columbia University, 1943; M.A., The Johns Hopkins University, 1947; Ph.D., University of California, 1953. Instructor of Mathematics and Physics, Ricker Junior College, 1943-44; Instructor of Mathematics, The Johns Hopkins University, 1944-46; Assistant Professor of Mathematics, University of Dayton, 1946-47; Assistant Professor of Mathematics, University of San Francisco, 1947-48; Assistant Professor of Mathematics and Physics, St. Mary's College, 1949-51; Assistant Professor of Mathematics, University of San Francisco, 1951-54; Professor of Mathematics, California State Polytechnic, 1954-56. At Santa Clara since 1956.

PETER A. SZEGO, Assistant Professor
Engineering
B.S., Stanford University, 1947. Assistant Professor of Mechanical Engineering, Rice Institute, 1951-54. At Santa Clara since 1956.

ALEXANDER A. TAIT, S.J., Assistant Professor
Religion
M.A., Gonzaga University, 1940. Assistant Professor of Religion, Loyola University of Los Angeles, 1948-52; Assistant Professor of Religion, Boston College, 1952-53; Assistant Professor of Religion, Loyola University of Los Angeles, 1953-56. At Santa Clara since 1956.

HAROLD M. TAPAY, Associate Professor
Engineering
B.A.Sc. in M.E., University of British Columbia, 1946; M.S., University of Washington, 1949. University Fellowship in Mechanical Engineering, University of Washington, 1948-49; Instructor in Mechanical Engineering, Kansas State College, 1949-50. Registered Engineer, State of California. At Santa Clara since 1950.

FRANCIS B. TIMS, Lecturer
Business Administration
B.S., University of California at Berkeley, 1950; C.P.A., State of California, 1955. Instructor, Menlo College. At Santa Clara since 1958.

JOSEPH M. TRICKETT, Professor
Business Administration
Ph.B., Washburn University, 1936; M.B.A., Stanford University, 1938; Ph.D., Stanford University, 1953. Dean, School of Management, Golden Gate College, 1946-52. At Santa Clara since 1958.

CLEMENS VAN PERRE, Assistant Professor
French
B.A., Royal Lyceum, Antwerp, 1908; Graduate, Athenaeum of Antwerp (Belgium) 1911; Graduate, Royal Conservatory, Antwerp, 1913;

Graduate University of Lauvain, 1913-14. Director of Music, Mt. Angel College, 1920-25; Columbia University (Portland), 1925-32. At Santa Clara since 1932.

VICTOR BENJAMIN VARI, Assistant Professor
Spanish, Italian
Director, Division of Foreign Languages
Chairman, Department of Spanish
A.B., San Francisco State College, 1942; M.A., Stanford University, 1952. University of Sorborne, (France) 1945. University of Lausanne, (Switzerland) 1945-46. At Santa Clara since 1946.

JAMES EDGAR WADE, Professor
English
Chairman, Department of English
A.B., University of Notre Dame, 1933; M.A., 1935. Ph.D., St. Louis University, 1942. Instructor, St. John's University, 1939-40. Associate Professor, University of San Francisco, 1940-48. At Santa Clara since 1948.

AUSTEN DEN WARBURTON, Associate Professor
Law
A.B., San Jose State College, 1938; LL.B., University of Santa Clara, 1941. At Santa Clara since 1946.

JOHN ANTHONY WEBER, S.J.
Director of the Ricard Memorial Observatory
M.A., Gonzaga University, 1933. Instructor in Physics and Mathematics, University of Santa Clara, 1935-36. At Santa Clara since 1941.

WILLIAM P. WHELIHAN, Colonel
Military Science and Tactics
B.S., United States Military Academy, 1933. Graduate Field Artillery Regular Course, 1939; Command and General Staff College, 1943; Colonel, Artillery, United States Army. At Santa Clara since 1957.

ALVIN M. WHITE, Instructor
Mathematics
A.B., Columbia University, 1949; A.M., University of California at Los Angeles, 1954. Teaching assistant in Mathematics, Stanford University, 1952-54; Acting Instructor, Stanford University, Spring, 1954. At Santa Clara since 1954.

FREDERICK D. WILHELMSEN, Associate Professor
Philosophy
A.B., University of San Francisco, 1946; M.A., Notre Dame University, 1948. At Santa Clara since 1950. On leave of absence commencing 1957.

WILLIAM W. WINANS, Lecturer
Business Administration
B.S., University of California, 1941. At Santa Clara since 1955.

TENNANT CAMPBELL WRIGHT, S.J., Instructor
English
A.B., Loyola University of Los Angeles, 1950; M.A., Gonzaga University, 1956. At Santa Clara since 1956.

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Victor Novak, B.A., M.L.S., Ph.D. ..... Loan Librarian
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Irene D. Palermo ..... Acquisition Assistant
Karen L. Iannacone ..... Catalogue Assistant
Joseph L. Nicholas, B.A. ..... Audio-Visual Service

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Victor F. Stefan, B.A. ..... Alumni Secretary

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Edward A. Amaral, M.D. ..... Director of Student Health
Helen A. Bull ..... Chief Nurse
Clara B. Palmer ..... Nursing Assistant

THE RICARD MEMORIAL OBSERVATORY

John A. Weber, S.J. ..... Director

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Joseph J. Pociask, S.J. ..... General Director
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John P. O'Connell, S.J. ..... Curator of Galtes Museum
Arthur D. Spearman, S.J. ..... Curator of Mission Museum

HUBBARD LABORATORIES

Bernard R. Hubbard, S.J., D.Sc. ..... Director
Allan Hancock ..... Associate Director
John A. Weber, S.J., M.A. ..... Technical Advisor

GENERAL INFORMATION

LOCATION

The University of Santa Clara, conducted by the Jesuit Fathers, is situated at Santa Clara on the site of the old Mission, in the southern part of the San Francisco metropolitan district and immediately adjacent to San Jose. Frequent railroad and bus service provides easy access to the various Bay cities, and direct connections to all parts of California and the West.

The valley of Santa Clara is famous throughout the world for the beauty of its scenery, the salubrity of its climate, and the excellence of its fruits. The climate is mild and equable both in summer and winter, and on that account singularly favorable for persistent study and research as well as for the maximum of agreeable out-of-doors recreation which such work makes necessary.

HISTORY

Mission Santa Clara. On January 12, 1777, two Franciscan Padres, de la Pena and Murguia, planted the Mission Cross and laid the foundations of Mission Santa Clara on the banks of the Guadalupe, about a mile and a half from the University grounds. Two years later a flood destroyed both church and monastery, and the Padres in consequence removed the Mission to the second site, two blocks from the present church. There, on November 9, 1781, they laid the foundations of a large adobe church and mission buildings. Three years later, on May 15, 1784, the new church was dedicated by the Venerable Padre Serra, then Padre Presidente of the Missions of California.

Owing to damage by earthquakes in 1812 and 1818 the Padres were forced to build anew and this time selected the site of the present Mission. There, on August 11, 1822, a still larger church was dedicated. With the passing of time the original church was largely rebuilt, though the chancel and the interior arrangements remained substantially as originally constructed. In October, 1926, the Mission was destroyed by fire and rebuilt in 1927, along the lines of the original structure. This new Mission was dedicated in 1928. The restoration of the Mission was made possible by the generosity of friends in the Santa Clara Valley as well as friends and Alumni of the University throughout the State of California.

In 1836 Mission Santa Clara was secularized and passed from the hands of the devoted Padres into those of politicians, who robbed the Mission of her lands and oppressed or drove away her children. When Rt. Rev. Joseph Sadoc Alemany, O.P., arrived as Bishop of the Diocese of San Francisco in 1850, he found only one Franciscan in charge of the Mission, which had been restored by the American government, though in a sadly reduced form.

Santa Clara College. Desiring to save the remnants of the Mission, and also to start a college to meet the growing need of the times, the Bishop invited the Soicety of Jesus to Santa Clara. The invitation was accepted, and accordingly on March 19, 1851, Father John Nobili laid the foundation of Santa Clara College.

He adapted the old adobe buildings to the requirements of a college. On April 28, 1885, the institution was chartered a University and continued to be known as Santa Clara College until 1912. It is the oldest institution of higher learning in the West. In 1857 the degree of A.B. was conferred on Thomas I. Bergin, the first to receive that degree from any California college.

During the subsequent years the College grew in influence and attendance. Several large new buildings were added, and for many years Santa Clara College, in both equipment and scholastic standing, ranked as the leading educational institution in the West. In its sixty years of existence as a college over seven thousand students were matriculated.

THE UNIVERSITY. In 1907 lectures were commenced with a view of preparing students to enter upon the professional courses in law, medicine and engineering. In 1911 the pre-medical curriculum was established and the law school begun. In 1912 the President and Board of Trustees adopted officially the name "University of Santa Clara."

In the summer of 1912, engineers of high standing were engaged to carry on the courses in engineering, and in the next summer a thoroughly equipped laboratory for engineering was prepared. In the same year the amount of work required by law students was increased and the classes in Law were held at night.

The outbreak of war in 1914 suspended the plans for expansion and it was not until after its close that they were resumed. In 1923 an extensive building program was commenced, with a view to provide an adequate material basis for the University, and during the following years there has been added a group of new buildings, including Alumni Science Hall, 1923; Montgomery Laboratories, Seifert Gymnasium, Kenna Hall and the Service Building, 1924; Donohoe Infirmary, 1925; the remodeling of the Auditorium in 1926; the Ricard Memorial Observatory, the Seismological and Meteorological Stations, the New Mission Church in 1928, Nobili Hall in 1930, the Varsi Library in 1931, Bergin Hall in 1938, the Delia L. Walsh Hall (Administration Building), and the James E. Walsh Hall in 1950; the de Saisset Art Gallery and Museum in 1955, and the Edward McLaughlin Hall in 1956.

Accompanying the Building Program there has come a corresponding growth in attendance and scholastic work. In 1923 the Pre-Medical program was restored, and a four year College of Business Administration added. In 1925 the College of Law was increased to four years; and the Preparatory Department transferred to a separate campus at College Park, San Jose. In 1926 the University celebrated its Diamond Jubilee and with enlarged facilities and equipment entered upon a program of greater service to the Church and state. In August, 1929, plans were formulated whereby the standing of the College of Law would be greatly enhanced. In August, 1930, the College of Law changed from an Evening Division to a full-time Day Division. In 1939, the College of Law was fully accredited by the American Bar Association and the Association of American Law Schools.

In developing a program of community service, the College of Business Administration in 1947, offered a number of Evening classes to make available the services of the business faculty to the people of the area who were interested in furthering their professional competency in business.

During the academic year of 1950-51 the University celebrated its one-hundredth year of service to the community. It was fittingly commem-

orated throughout the academic year by functions of a religious, academic, civic and social nature.

In 1956 plans were formulated for a modified Nursing Program designed to give a year of academic work to first year students of O'Connor Hospital.

SYSTEM OF EDUCATION

The Jesuit system of education aims at producing men who will possess sound judgment, high moral ideals, ability to evaluate critically, keen social consciousness. The development of the student's character as well as his intellectual progress are the objectives of Santa Clara's educational system.

To accomplish its aim the University of Santa Clara bases its education on a solid core of integrated cultural courses. This core permeates all fields of major emphasis, thereby broadening and enriching professional fields. Thus every student, following his interests and aptitudes, receives instruction in language, philosophy, natural science, and social thought, according to a definite hierarchy of values and integrated into the pattern of Christian culture.

Although Santa Clara is a Catholic University, non-Catholic students who meet the academic requirements are admitted. Courses in Religion are required only of Catholic students.

GROUNDS AND BUILDINGS

Location. The University has two campuses. One, of approximately forty acres, is situated on the El Camino Real in the City of Santa Clara on the site of the third Mission Santa Clara. On one half of this campus the University buildings, grouped in series of quadrangles around the Mission Church, provide a continuation of the original Mission. On the other half of this campus are located the Athletic and R.O.T.C. fields. The second campus of the University, where special studies are pursued, comprising five acres, is located just outside the Town of Los Gatos.

Mission Santa Clara, built in 1822, and the Students' Chapel, built in 1887, were destroyed by fire on October 25, 1926. Through the generosity of Alumni and friends of the University, a new Mission Church, a replica of the original church, stands on the former site, the heart and center of University activities. It serves as the Students' Chapel and enshrines the priceless relics of the old Mission rescued from the fire by the heroic efforts of the Faculty and students.

The Faculty Residence, built in 1911 to replace the building destroyed by fire in 1909. It is the residence of the Jesuit community.

O'Connor Hall, built in 1912, is the gift of Mr. and Mrs. Myles P. O'Connor. On the first floor are the class-rooms of the College of Arts and Sciences. The second and third floors contain private rooms for students. In the basement is the University Bookstore.

The Theatre, originally built in 1870 and completely reconstructed in 1926, is one of the largest theatres for amateur productions in the West, and has been the scene of such notable dramatic productions as the Passion Play and the Mission Play of Santa Clara.

Alumni Science Hall, built in 1924, is the gift of the Alumni of Santa Clara and contains offices, lecture rooms and laboratories of the Departments of Biology, Chemistry and Physics; and the electrical equipment service rooms.

Robert E. Kenna Hall, erected in 1924, is dedicated to Rev. Robert Emmet Kenna, S.J., student, professor and twice president of Santa Clara College. On the first floor are the offices, class rooms, laboratories and library of the College of Business Administration, the offices of the coaches and the general manager of athletics. The two upper floors contain private rooms for lower division students.

Montgomery Laboratories, erected in 1924, are dedicated to John J. Montgomery, "Father of Aviation," one time Professor of Physics in the University. On the first floor are the materials testing, mechanical, and electrical laboratories of the College of Engineering. In 1930 a second story was added, which houses offices, drawing and lecture rooms and library.

Seifert Gymnasium, erected in 1924, is a bequest of the late Dr. George W. Seifert, B.S.. '79. It houses the plunge, the basketball court, locker rooms for Varsity and class teams, music rooms and students' lounge room.

The Service Building, erected in 1924, houses the laundry, power and heating plant and service rooms. The second floor provides a residence for employees.

Donohoe Infirmary, erected in 1925, is the gift of Miss Katherine Donohoe in memory of her father and mother, James and Rose Donohoe. It is a complete small hospital, with private rooms and ward, diet kitchen, dispensary, operating room, chapel, and offices for the infirmarian and visiting physician.

The Ricard Memorial Observatory is the gift of the Knights of Columbus of California to the "Padre of the Rains." This building, with its three domes, houses the telescopes and other instruments. An underground passageway connects the vault of the Seismic Station to the Observatory. The Seismic Station contains the 80Kg Wiechert Horizontal and Vertical Seismographs, three Galitzin Seismographs of the long range type and the two Wood-Anderson Seismographs, especially designed for local earthquakes. The Observatory, likewise, houses the other necessities of a station of this type, such as battery rooms, photographic dark rooms and offices where the records are kept for study and reference.

Nobili Hall, erected in 1930, is dedicated to the Rev. John Nobili, S.J., the first president of the University. On the first floor are the refectories for the Fathers, students, guests and employees; kitchen and service rooms. The second floor contains rooms for lay professors as well as for students. The third and fourth floors have rooms reserved entirely for students.

The Library. Construction of Varsi Library commenced on March 12, 1931, and the building was dedicated on October 10, 1931. The first floor houses the catalogue room, offices of the librarians and the main reading room. On the second floor is the periodical room. In the stack area provision is made for 90,000 volumes. The Library was made possible through the generosity of a distinguished alumnus and his wife, Mr. and Mrs. James E. Walsh. It was named the Varsi Library in honor of the sixth president of Santa Clara, Rev. Aloysius Varsi, S.J., a lifelong friend of the donors.

Bergin Hall is the gift to Alma Mater of her first graduate, Hon. Thomas I. Bergin, A.B., 1857. This building is used exclusively for the College of Law and contains the Law Library, moot court, conference rooms for students and faculty, classrooms and offices of the Law Faculty.

Delia L. Walsh Hall, completed in the early months of 1950, contains the administrative offices of the University. Its construction was made possible by a substantial gift to the University by Delia L. and James E. Walsh.

James E. Walsh Hall, completed in 1950, was constructed to honor the memory of an alumnus of the University who provided most generously for the University in his will. The building contains a recreational center and living quarters for students.

de Saisset Art Gallery and Museum, completed in 1955, contains a number of art galleries and exhibit rooms. Its construction was made possible by a substantial gift to the University by the late Isabel de Saisset.

Edward McLaughlin Hall, completed in 1957, honors the memory of an alumnus who provided most generously for the University during his lifetime. The building contains a recreational center and living quarters for students.

SUBSIDIARY BUILDINGS

After the war in 1946, with financial aid from the Federal and State government, additional laboratories for the science departments and for the College of Engineering, space for additional recreational facilities for students, storage buildings, apartments for married veterans, were constructed. A number of these buildings, temporary in nature, are still in use.

A number of buildings have been provided for the use of the Department of Military Science and Tactics. These buildings contain classrooms, offices and storage space for military equipment.

RADIO STATION KSCU-FM

In the Fall of 1952 the Administration of the University authorized the use of one of the auxiliary Science buildings for a radio studio and broadcasting station, (KSCU-FM). This station houses equipment for broadcasting to the campus, and an FM station authorized by the Federal Communications Commission, which broadcasts on a frequency of 90.1 megacycles, FM channel 211. The station is on the air every evening from 7:00 to 11:30 p.m.

LABORATORIES

The laboratories of the departments of Biology, Chemistry and Physics are located on the three floors of the Alumni Science Hall.

The laboratories of the College of Engineering are located in the Montgomery Laboratories and provide complete laboratory facilities for engineering courses.

The Astronomical, Seismological and Meteorological equipment is located in the Observatory.

ENDOWMENT AND NEW BUILDINGS

The growth in the number of students and the work of the University has made it imperative that adequate buildings and endowment be provided. For this, and in order that Santa Clara may widen its scope as an educational institution of recognized standing, funds are necessary. Santa Clara stands in imperative need of an increased endowment. The work the University has accomplished in the past is an earnest of what she will do when increased facilities are afforded her. The University of Santa Clara Alumni Association is currently continuing an appeal to establish a substantial endowment which was begun on the occasion of the University's Centennial celebration in 1951.

An endowment implies a founder or founders and benefactors. During past years, many have helped the University and generous donations have been made. The new Mission Church, Faculty Residence, Donohoe In-

firmary, Bergin, O'Connor, and Alumni Science Halls, Seifert Gymnasium, Ricard Memorial Observatory, Nobili Hall, Varsi Library, and the new Delia L. Walsh and James E. Walsh Halls, and the de Saisset Art Gallery are inspiring examples of such support.

But before other buildings, for which the plans of the University provide, may be added, further benefactions will be needed. Other institutions, even those state-aided and richly endowed, receive generous assistance in their work and hesitate not to ask for it. Santa Clara feels that generous friends are not lacking, though for the want of deeper thought on the matter, few realize the importance of Christian educational work, the immense sacrifice it entails, and the merit to be obtained in cooperating and sharing with Christian educators in their work for God and country and the welfare of the young men of our generation.

The Jesuit faculty of the University has given its life services freely and gladly to the work. It enjoys the wholehearted co-operation of a large group of highly trained and competent lay associates. Those who would share in this great enterprise can do so most effectively by rendering material aid and contributing funds for the continuance and development of the work.

FORM OF BEQUEST

I give and bequeath unto the President and the Board of Trustees of Santa Clara College, a corporation duly incorporated under the laws of the State of California, a sum of ..... dollars.

NEED OF ADDITIONAL SCHOLARSHIPS

Every year deserving young men of high character and aspirations, whose means do not permit their attending the University, appeal to the Faculty for assistance in obtaining the education for which their talents and vocations fit them. There is scarcely a university in the United States which is not provided with a fund for this purpose, and a relatively large per cent of successful college men spring from the class of assisted students. To contribute to such a purpose is clearly a noble benefaction. But this is especially so with regard to those who apply for help to the University of Santa Clara. They are, as a rule, young men of high standing, who understand the paramount value of an education in a university which aims at the highest intellectual development of the student, while devoting no less attention to the balanced development of his moral character. As a consequence, to assist them in attaining their desire is to aid young men of outstanding ability whose future is more than ordinarily full of promise, and who are destined to exert a most powerful influence on those among whom their lives will be spent.

Through the generosity of friends of the University a few such scholarships have been established, but there is need for many more, either through permanent endowment or by annual gifts.

SCHOLARSHIP QUALIFICATIONS

Besides the conditions laid down by the donors, all scholarships administered by the University are subject to the following conditions:

First: In selecting students for scholarship benefits, the Committee requires evidence of financial need. From the applications which satisfy the above requirement, preference will be given to students with higher scholastic attainments.

Second: Students who are recipients of scholarships must maintain an average of at least 2.50 (C+) and be approved by the Committee on Academic Standing.

Third: In selecting students for scholarships, participation in extra-curricular activities will be taken into account. Such activities are debating, dramatics, athletics, music and contributions to the University Weekly and Annual. Continuance in extra-curricular activities will be required of all holders of scholarships.

Fourth: A student who holds a scholarship must renew his petition for a scholarship each year. Petitions for new or renewed scholarships by students already in attendance at the University must be submitted during the month of May to the Secretary of the Committee on Scholarships.

Fifth: Scholarships may be cancelled at any time by the Administration for any infraction of the rules and regulations of the University.

FRESHMEN: Incoming freshmen students must fulfill the following conditions in order to qualify for a scholarship:

A special scholarship application, obtainable from the University, must be submitted to the Committee on Scholarships by March 1 of the year in which the student intends to matriculate. On this application the student must present evidence of financial need.

In addition, a transcript of all previous schooling and letters of recommendation from the high school principal and senior counselor must be furnished.

To qualify academically, the applicant must take the Scholastic Aptitude Test, administered by the College Entrance Examination Board, and have the results sent to the Committee by the date indicated on the University's application form.

DESCRIPTION OF SCHOLARSHIPS

Alumni Scholarship: A perpetual scholarship provided by "The Alumni Scholarship Fund" ($1,620) established in 1945 by the University of Santa Clara Alumni Association for the benefit of a deserving student.

Jesse W. Bryan Scholarship: A perpetual scholarship provided by a gift ($12,500) in 1913 from Mrs. Sarah A. Bryan of San Francisco in memory of her son, Mr. Jesse W. Bryan (S.C. 1891-92), for the benefit of a boarding student.

Magin Catala Scholarship Fund: A perpetual scholarship ($200) contributed and partially founded in 1954 by the Catala Club of the University of Santa Clara for the benefit of a deserving and needy student majoring in Liberal Arts, to be designated by the President of the University.

James W. Coffroth Scholarships: Perpetual scholarships provided from the Trust Fund ($18,800) established in 1943 at the Wells Fargo Bank, San Francisco, by the bequest of James W. Coffroth of San Diego, for the benefit of needy undergraduate students.

F. W. Conlogue Scholarships: Annual Scholarships (totaling $1,000) contributed in 1949 and subsequently by F. W. Conlogue of Boulder Creek for needy and deserving Catholic students of America.

Robert L. Coward Scholarships: Annual scholarships contributed in 1918 and subsequently by friends of the University in memory of Mr. Robert L. Coward (S.C. 1896-99), for the benefit of needy and

deserving students who are outstanding for contributions to the extra curricular activities of the University.

Katherine Connor Scholarships: A perpetual scholarship provided by bequest ($4,500) in 1942 from Miss Katherine Connor of San Jose, for the benefit of students designated by the President of the University.

de Saisset-Filipello Scholarship: A perpetual scholarship provided by a gift ($1,500) in 1944 from Miss Isabel de Saisset and Mrs. E. A. Filipello of San Jose, for the benefit of a student designated by the President of the University.

James Dunne Scholarships: Fifteen perpetual scholarships provided by a gift ($224,604) in 1931 from Mrs. Viola K. Dunne of Hillsborough, in memory of her husband, Mr. James Dunne (S.C. 1863-74), for the benefit of resident students from the State of California.

Farmers Insurance Group Scholarships: Annual scholarships (totaling $570) contributed in 1958 and subsequently by The Farmers Insurance Group, for the benefit of deserving students in the College of Law.

Mamie H. Evans Scholarships: Perpetual scholarships provided by "The Mamie H. Evans Memorial Scholarship Fund" ($9,753) established in 1938 by a bequest from Mrs. Mamie H. Evans of Butte City, for the benefit of needy and deserving students.

William C. Gianera Scholarships: Perpetual scholarships and grants-in-aid provided by the Fund ($11,259) inaugurated in 1951, by friends of the University in honor of William C. Gianera, S.J., former President of the University (1945-51), for the benefit of needy and deserving students.

Robert and Guillermina Graham Scholarships: Perpetual scholarships provided by a Fund ($22,387) inaugurated in 1950 by Mr. and Mrs. Robert M. Graham, (S.C. 1925-29 and former Bursar of the University), for the benefit of needy and deserving students of the Catholic Faith.

Robert L. Jacobs Scholarship: A perpetual scholarship provided by a Fund ($1,025) established in 1945 by friends of Mr. and Mrs. Leon Jacobs of San Jose in honor of their son, Robert L. Jacobs (S.C. 1941-45) who gave his life in World War II, for the benefit of a student designated by the President of the University.

Knights of Columbus Scholarship: An annual scholarship ($400) contributed in 1948 and subsequently by the California Knights of Columbus, for the benefit of a needy and deserving student.

George H. Mayr Scholarships: Annual tuition scholarships (totaling $4,000) contributed in 1953 and subsequently by the George H. Mayr Educational Foundation of Los Angeles, for the benefit of needy and deserving students from the State of California.

Jennie L. Murphy and Bessie W. Murphy Scholarship Fund: Perpetual scholarships provided through a gift ($5,000) in 1955 from the heirs of the Bessie W. Murphy Estate in memory of Jennie L. Murphy and Bessie W. Murphy to be used for worthy students not otherwise able to receive an education; selection to be made by the President of the University.

National Association of Accountants Scholarship: An annual scholarship ($500) contributed in 1957 and subsequently by the San Francisco Chapter of the National Association of Accountants, for the benefit of

a needy and deserving student in the College of Business Administration; selection to be made by the Committee on Scholarships.

Pacific-Western Foundation Engineering Scholarship: An annual scholarship ($500) contributed in 1953 and subsequently by the Pacific-Western Foundation (of the Western Gear Works), in honor of Philip L. Bannan, for the benefit of a student in the College of Engineering.

John Paul Paganini Scholarship: A perpetual scholarship provided by a gift ($10,000) in 1945 from Mr. Charles M. Paganini and Family of San Francisco in honor of his son, John Paul Paganini (S.C. 1934-38), who gave his life in World War II, for the benefit of a student designated by the President of the University.

Benjamin Patocchi Scholarship. A perpetual scholarship provided by a bequest ($8,000) in 1949 from Mr. Benjamin J. Patocchi of Sonoma County, for the benefit of a student designated by the President of the University.

Peninsula Chapter Alumni Scholarship: An annual scholarship ($600) inaugurated in 1954 and annually contributed by the Peninsula Chapter of the University of Santa Clara Alumni Association for the benefit of a deserving and needy student of the Peninsula communities, to be designated by the officers of the Peninsula Chapter and the President of the University.

James D. Phelan Scholarships: Perpetual scholarships provided by a bequest ($50,000) in 1931 from the Hon. James D. Phelan, former mayor of San Francisco and United States Senator, for the benefit of students designated by the President of the University.

Radio Corporation of America Scholarship: An annual scholarship ($800) contributed in 1950 and subsequently by the Radio Corporation of America, for the benefit of an undergraduate student of high academic rank in the College of Science or Engineering.

John McKenna Scott Scholarship Fund: A perpetual scholarship provided by a bequest ($9,737) in 1957 from Mr. John McKenna Scott of San Francisco, for the benefit of a Mechanical Engineering student selected by the Board of Trustees according to norms indicated by the donor.

Catharine Sexton Scholarship: A perpetual scholarship provided by a bequest ($18,000) in 1946 from Mr. John E. Sexton, Jr., of Palisade, Nevada, in memory of his mother, Mrs. Catharine Sexton, for the benefit of a boarding student from El Dorado County, California.

John E. Sexton, Sr., Scholarship: A perpetual scholarship provided by a bequest ($18,000) in 1946 from Mr. John E. Sexton, Jr., of Palisade, Nevada, in memory of his father, Mr. John E. Sexton, Sr., for the benefit of a boarding student from El Dorado County, California.

John E. Sexton, Jr., Scholarship: Perpetual scholarship provided by a bequest ($18,000) in 1946 from Mr. John E. Sexton, Jr., of Palisade, Nevada, for the benefit of a boarding student from Eureka County, Nevada.

Earl C. Smart Scholarships: Perpetual scholarships provided by a bequest ($7,500) in 1957 from Mr. Earl C. Smart of San Jose, for the benefit of students designated by the President of the University in accord with the wishes of the donor.

Standard Oil Company of California Undergraduate Leadership Scholarships: Annual scholarships ($400 each) contributed in 1958 and subsequently by the Standard Oil Company of California, for the

benefit of needy and deserving students designated by the Committee on Scholarships.

Alice Phelan Sullivan Scholarships: Perpetual scholarships provided by a gift ($6,500) in 1912 and a bequest ($10,000) in 1957 by Noel Sullivan in memory of his mother, Mrs. Alice Phelan Sullivan of San Francisco, for the benefit of students designated by the President of the University.

Union Carbide Scholarships: For annual scholarships (towards tuition, fees and books) contributed by the Union Carbide and Carbon Corporation for the benefit of promising and needy students intending careers in business or industry, to be selected by the Committee on Scholarships and the Union Carbide faculty advisor, one scholarship to be inaugurated each year beginning 1954.

The Walter V. Walsh Scholarship Fund: Perpetual scholarships provided by a bequest ($5,000) in 1957 from Mr. Walter V. Walsh of San Francisco for the benefit of needy and deserving students in the College of Law.

Frank and Alice Walterstein Scholarships: Perpetual scholarships provided by a bequest ($35,916) in 1949 from Mrs. Alice Walterstein, for the benefit of students designated by the President of the University.

West Coast Electronics Manufacturers' Association Scholarship: An annual scholarship ($600) contributed in 1953 and subsequently by the West Coast Electronics Manufacturers' Association, for the benefit of a needy and deserving student majoring in Electrical Engineering in the College of Engineering, selected by the Committee on Scholarships.

JESUIT SCHOLARSHIPS

Hanna: An annual scholarship ($500) contributed in 1935 and subsequently by the Jesuit Fathers of the University in honor of His Excellency the Most Reverend Edward J. Hanna, former Archbishop of San Francisco, for the benefit of a needy and deserving student nominated by the incumbent Archbishop from the graduates of Catholic High Schools of the Archdiocese.

Bellarmine: Eight annual scholarships ($500 each) contributed in 1953 and subsequently by the Jesuit Fathers of the University, for the benefit of needy and deserving students from Bellarmine College Preparatory, San Jose, nominated by the Faculty of that institution.

Loyola: An annual scholarship ($500) in the College of Engineering contributed in 1935 and subsequently by the Jesuit Fathers of the University, for the benefit of a needy and deserving student from Loyola High School, Los Angeles, nominated by the Faculty of that institution.

St. Ignatius: An annual scholarship ($500) in the College of Engineering contributed in 1935 and subsequently by the Jesuit Fathers of the University, for the benefit of a needy and deserving student from St. Ignatius High School, San Francicso, nominated by the Faculty of that institution.

St. Joseph's (Alameda)

Brophy: Four annual scholarships ($500 each) contributed in 1956 and subsequently by the Jesuit Fathers of the University, for the benefit of needy and deserving students from Brophy College Preparatory, Phoenix, Arizona, nominated by the Faculty of that institution.

Santa Clara: A limited number of annual scholarships (amounts according to need) contributed in 1930 and subsequently by the Jesuit Fathers of the University, for the benefit of needy and deserving students selected by the Committee on Scholarships.

Emery: A limited number of scholarships (amounts according to need) in the College of Law, contributed in 1956 and subsequently by the Jesuit Fathers of the University in honor of James A. Emery (S.C. 1893-96), for the benefit of needy and deserving students selected by the Committee on Scholarships.

Loan Funds

The following Loan Funds are available to students for educational expenses under certain conditions established by the University.

The Catala Club Loan Fund: This fund, established and administered by the Catala Club, is available for students in the Senior, Junior, and Sophomore years to enable them to continue and complete their education at the University. The Catala Club is an association of the mothers of present and past University students and of other women interested in the work of the University. Its officers may be contacted by addressing The University.

The College of Law Loan Fund: This fund, provided by a bequest ($750) in 1948 from Mr. William G. Berg in honor of his parents, Mr. and Mrs. Herman E. Berg, is available at low rate of interest for students of the College of Law. Application may be made through the Dean of the College of Law.

STUDENT EMPLOYMENT

Employment is available at the University for a small number of students who need to earn the means to defray part of their school expenses. The compensation depends on the number of hours given to the work, and the amount earned is applied on the student's account with the University. Preference for employment is given to worthy students of high scholastic standing. All students so employed must carry their regular schedule with an over-all semester average of "C".

EXPENSES

Application Charge $5.00

An **Evaluation Charge** for the processing and correspondence entailed in Applications for Admission to the University is required of all students. This charge is to be sent with each application form and is not refundable.

Total Tuition and Fees (per semester) $350.00

The **Tuition and Fees** charge for all students both resident and non-resident in the Colleges and Schools of the University is to be paid prior to or at the time of registration. This charge provides for all the educational services at the University, such as matriculation, instruction, counseling, library, laboratory, ordinary medical services, student publications (exclusive of The Redwood) and activities, and military science. $50.00 of this total charge is to be paid within the time specified in the notice of acceptance, and is refundable only if the student cancels his acceptance by August 1.

Extraordinary Services

Students who, because of delay or absence or because of extraordinary needs and added services, require special attention are held to defray the costs of such services and attention.

Students may register after the appointed registration days as specified below upon payment of a special fee:

Until the end of the first week	$ 5.00
Afterwards	10.00
Late or anticipated examinations, each	2.00
Remedial English Course—Subject "A"—each course	10.00
Late submission of administrative forms (e.g., pre-registration, application for degree, etc.) per day	2.00
Charges for damage or loss in Residence Halls or in Military equipment will be billed directly to the student and parents upon report of damage or loss.	
Breakage Card—required for Chemistry courses — unused amount returned to student at close of course	5.00
Additional copies of the student's transcript of grades, each	1.00
Summer Surveying Course (for Engineers)	50.00
Graduation	25.00
For special charges pertinent to the College of Law, cf., College of Law Bulletin.	
For special charges pertinent to the Graduate School and to Teacher Education, cf., Graduate Bulletin.	

Residence

Room and Board (per semester) $400.00

This charge provides for residence and for board during the academic semester. For students desiring these services during the Christmas recess (usually over two weeks) an extra charge of $50.00 will be made.

Resident students should bring their own blankets and bed spread. Sheets and pillow cases are furnished by the University. The student wardrobe is regulated only by the request that levis be not worn on the campus.

Laundry Deposit (per semester) ..... $ 35.00

Students desiring the service of the University Laundry are required to establish a credit of at least $35 at the beginning of each semester. Unused laundry credit will be either applied against other unpaid expenses or refunded.

"Special Student" Expense

A "Special Student" is one who, though taking courses at the University, is not a candidate for its degrees, cf. page 45). For such students the Tuition and Fees charge shall be $30.00 per credit hour.

Method of Payment

All charges are to be paid in advance of registration. Hence, students should come prepared to pay all charges on the day of registration, or should have payments from home definitely in the mail so as to reach the University at least **one week** prior to the date of registration.

Arrangements for Deferred Payments (installments during the course of the semester) can be sanctioned only in particular cases and with the approval of the Treasurer. These arrangements must be completed at

least a week before the date of registration. For this added service a processing fee of $1.00 per payment will be charged.

Remittances should be made payable to the "University of Santa Clara" and mailed to the Treasurer's Office.

Students who have unpaid bills at the University or who defer payments without approval are subject to dismissal from the University and, as long as such bills remain unpaid, may not receive transcripts of credits nor any diploma.

Refunds

There will be no refund of Extraordinary charges.

Refund of Tuition and Fees. Students who withdraw from the University may receive refunds of this charge according to the following scale of withdrawal:

—within one week after registration, payment refunded minus $ 50.00.
—within two weeks after registration, payment refunded minus 90.00.
—within two to four weeks after registration, payment refunded minus ..... 150.00.

For withdrawal after four weeks of classes there will be no refund of this charge.

Refund of Room and Board. Refunds of this charge will be made according to the following scale of withdrawal:

—within the first six weeks, unused portion of payment (prorated as from the Monday following withdrawal) minus....$100.00.
—within the second six weeks, unused portion (prorated as above) minus 67.00
—within twelve to seventeen weeks, unused portion, prorated as above) minus ..... 33.00.
—after the seventeenth week, no refund will be made.

(Refunds cannot be processed until a month after the student's withdrawal.)

Infirmary Services

Basic medical services are provided to all students. These services include ordinary medical and prescription services of the University physician, and ordinary attendance of the University nurses and Infirmary staff. Medicines, X-ray services, etc., will be charged at standard prices. Rooms in the Infirmary are restricted to resident students, resident Faculty and Staff, and to students boarding off-campus. Current charges for these facilities are $5.00 per day for resident students, Faculty, and Staff, and $10.00 per day for students boarding off-campus.

UNIVERSITY BOOKSTORE

The University Bookstore, located in the basement at the north end of O'Connor Hall, is completely equipped to serve the students of the University in furnishing all books and supplies necessary for their courses. Engineering students will find a varied selection of fine drawing instruments and slide rules. Also available are typewriters, stationery, fountain pens, religious articles, subscriptions to magazines, etc., etc.

An average cost of books alone would be about $40.00 for students in the Arts and Sciences and for students in Business Administration. Costs will be about $60.00 for Engineering students. These estimates do not include the cost of slide rules and special instruments for special courses.

STUDENT ORGANIZATIONS

College life must include the development of the social side of every student's character. Marked initiative and leadership in organized religious and social movements for the common welfare of his fellows, are qualities expected of college men generally. For this purpose the University student organizations and activities furnish splendid opportunity.

RELIGIOUS ACTIVITIES

As the first thought of the University is the encouragement of a sound religious life on the part of the student body, special attention is given to those sodalities and religious organizations sponsored by the Church, some of which have existed at Santa Clara for approximately a century.

Sodality of the Immaculate Conception. Its object is to promote in its members a special and filial devotion to the Immaculate Mother of God, to imitate her virtues, to encourage, both by word and example, an eminent purity of morals and a manly fidelity to the practice of religion.

The League of the Sacred Heart. The object of this Association is to foster in the students an earnest religious spirit, particularly a deep and tender love towards our Lord in the Sacrament of His Love, and a consequent reparation for the offenses committeed against Him. To this end the First Friday Communion is zealously encouraged.

The Saint John Berchmans' Sanctuary Society. This society is composed of students who have merited to serve at the Holy Sacrifice of the Mass and to assist in the religious services in the Mission Church.

STUDENT CONGRESS OF THE UNIVERSITY

The Student Congress of the University is the student body organized for the encouragement of student activities, and such other work as may be recommended by the Faculty and Administration.

NATIONAL HONOR SOCIETIES

Alpha Sigma Nu. Alpha Sigma Nu is a National Honor Society with chapters in various Jesuit Colleges and Universities throughout the United States. It is a society organized of honor students who have distinguished themselves in Scholarship, Service and Loyalty to their College or University.

Beta Gamma Sigma. The Delta of California Chapter of Beta Gamma Sigma at the University of Santa Clara is a professional business honor fraternity which has been inaugurated to encourage and reward scholarship and accomplishment among students of commerce and business administration; to promote the advancement of education in the art and science of business; and to foster integrity in the conduct of business operations.

Members are selected on the basis of high scholarship and good moral character. Members of the senior class must rank in the upper 10 per cent of their graduating class and Juniors must rank among the upper 4 per cent of their class.

Tau Beta Pi. The Tau Beta Pi Association is a National Engineering Honor Society. The California Zeta Chapter of Tau Beta Pi has been installed at the University of Santa Clara to encourage and to recognize outstanding scholarship and exemplary character among undergraduate members of the College of Engineering. Members are selected on the basis of their "Scholarship, Integrity and Diligence".

UNIVERSITY SERVICE SOCIETY

Kappa Zeta Phi. The Kappa Zeta Phi at the University of Santa Clara is a campus fraternity. It is an honor fraternity composed of students who are above average academically and who are outstanding in campus activities and in their loyalty to the University and the student body. Its members devote a great deal of time to service to the University and in turn have gained the respect and admiration of the whole University.

NATIONAL SOCIETIES

Delta Sigma Pi. Sigma Xi Chapter of the University of Santa Clara is a chapter of the Delta Sigma Pi National Commerce Fraternity. This is a professional fraternity composed of students in the College of Business Administration who are above average academically and who are leading students in activities in the College of Business Administration. It is neither secret nor a social fraternity and its members are selected on the basis of academic standing and professional interests in the business field.

The National Federation of Catholic College Students. The National Federation of Catholic College Students is a union of Catholic Colleges in the United States dedicated to training its members to assume leadership in the post-college community. Through an extensive system of commissions which includes the principal fields of extracurricular college activities, the Federation strives to promote student awareness of community responsibility, the need of Catholic lay leadership, and the inherent unity of Catholic College people. The Federation also acts as a center for the exchange of information about student affairs.

The Santa Clara unit is active not only in the national organization but in the regional unit of the San Francisco archdiocese.

Scabbard and Blade. Scabbard and Blade is a national Honor society composed of selected members of the Advanced ROTC. Its purpose is to unite in closer relationship the military departments of American Universities and Colleges; to preserve and develop the essential qualities of good and efficient officers; to prepare members as educated men to take a more active part and to have a greater influence in the military affairs of the communities in which they may reside and above all to spread intelligent information concerning the military requirements of our country.

Pershing Rifles. The purpose of the National Honorary Society, Pershing Rifles, is to encourage, develop, and preserve the highest ideals of the military profession, to provide appropriate recognition of a high degree of military ability among cadets of the Reserve Officers' Training Corps and to instill in the membership the need for assumption of civic responsibility. Active membership is open only to cadets of the Basic Course.

DEPARTMENTAL ORGANIZATIONS

Each department of the University has its own organization for the study of technical problems and for the encouragement of social life among the students of the department.

The Engineering Society. This is an organization made up of students with the College of Engineering with the object of familiarizing them with the conduct of meetings of public bodies of the acquisition of ease in public speaking. Lectures to the engineering students are given before this body by guest speakers.

The Business Administration Association. This is an organization of students in the College of Business Administration for the study of business problems and for the encouragement of social activities among the students of the College. Frequent lectures are given before the Association by business men of prominence.

Mendel Club. This is an association of students preparing for the study of medicine, organized for the study of scientific subjects and the encouragement of such activities as are of particular interest to the students of this department.

The Student Bar Associaton. This organization exists to encourage fellowship, to foster individual initiative, to provide an organ for the expression and execution of constructive ideas and to provide a liaison body between students and faculty. It sponsors student activities and develops a sense of professional responsibility in its members. Its organization is patterned after that of the State Bar of California. Its membership is open to all students in the College of Law and all students are urged to become members of the Association in order that they may share in the benefits of such membership.

The International Relations Club. This is an association of the students interested chiefly in Political Science. The purpose of this organization is the study of international problems of both the past and the future. It is affiliated to the Carnegie International Clubs.

The Galtes Chemistry Society. This organization is made up of students in the Department of Chemistry whose object is to encourage the students in the study of Chemistry and to further such activities as are of interest to students of Chemistry.

The Nobili Club. Named to honor the memory of the first president of Santa Clara, Rev. John Nobili, S.J., the Nobili Club is the official language club on the campus. Its purpose is twofold: First, it aims to foster among the students interest in the countries and civilizations which have contributed to the culture of the world. Secondly, it supplements the academic language courses and encourages interested students to pursue more intensively this study of the ancient and modern languages.

Day Scholars Association. An association of non-resident students to promote active participation in student affairs.

Blackstone Pre-Legal Society. The Blackstone Pre-Legal Society is composed of undergraduate students who aspire to attend law school and wish to acquaint themselves with the general duties of the legal profession before beginning their graduate work. Pursuant to this orientation program, semi-monthly meetings are held at which some prominent member of the legal profession explores a major field of law from the lay-man's point of view. Periodically, introductory lectures are given by the law school faculty on the basic subjects of law school. Student participation is encouraged at all times.

In order to facilitate the transition from undergraduate school to law school the Blackstone members are included in several law student activities and social functions. A member of the law school faculty acts as advisor. A nominal fee is self-imposed for membership cards.

The Thomists. An organization of upperclassmen interested in exploring advanced philosophical issues, and in correlating philosophy with the other sciences and the humanities. Guest speakers from within the University and from neighboring colleges and universities are invited, from time to time, to speak to the club.

Staff-Radio Station KSCU-FM and Campus Radio. Students who because of their knowledge of physics and engineering are interested either in the technical operation of a radio station or because of their interest in dramatics and music are interested in the administration and programming of entertainment, may through participation in staff activities advance their practical knowledge of radio communications. This activity is under the direction of the staff of the Physics Department.

The St. Thomas More Society was established at the College of Law during the school year, 1955-56. Its activities are primarily spiritual. Its membership is open to all students of the College of Law and those students of the University who are interested in the teaching and philosophy of St. Thomas More. Its members attend a quarterly Communion Breakfast on the campus of the University, and sponsor lectures by prominent catholic lawyers and religious leaders on the application of christian philosophy to current legal problems.

The Edward Shipsey Literary Club. A student society to promote appreciation of significant literature and to encourage creative writing. During the course of the year, ideas are exchanged on a variety of topics. Programs regularly include: the reading of papers and creative works, the hearing of special literary recordings, and the presentation of guest speakers.

The Student Archaeological and Historical Research Committee. This group functions to assist the Archaeological and Historical Research Committee in the actual removal of artifacts, bones, etc., from ancient Indian burial sites; in the classification of items so discovered, and the preparation of these items for display purposes in museums either on campus or in museums of the regional area. Membership as a Student Affiliate is open to any student who shows active interest in the archaeological, paleontological, osteological, or historical (regional) fields. Activities also include papers in the realm of history, archaeological aspects, etc., seminars in osteology and the further development of knowledge in the fields of archaeology and paleontology.

DRAMATICS

A high standard of dramatics has been set at Santa Clara from the beginning. Earliest records show that classical productions were quite the accepted thing even in the fifties.

Dramatic productions are staged, giving opportunity to a large proportion of the student body to participate. In the past these productions have included such notable performances as "The Mission Play of Santa Clara" and "The Light Eternal" by Martin V. Merle, '06, and "The Passion Play of Santa Clara" and "The Weaver of Tarsus" by Clay M. Greene, '69. The organization for promoting Dramatics is the Clay M. Greene Players.

DEBATING

Debating societies are maintained which arrange each year intercollegiate debates with representative colleges and universities. The traditional debating society on the campus is the Literary Congress which held its first meeting on February 22, 1857. It consists of two Houses, the Philalethic Senate and the House of Philhistorians.

MUSIC

The University Band and Orchestra furnish their members with the opportunity for ensemble playing at the public exercises of the University.

The University Choir and Glee Club furnish vocal music for services in the Mission Church and the public functions of the University.

The ROTC Band performs for military drill and ceremonies in which the remainder of the corps of ROTC cadets participates both on and off the campus.

PUBLICATIONS

"The Santa Clara." The "Santa Clara" is the official weekly newspaper of the University. The aim of the "Santa Clara" is: To publish the news of the University, to aid in constructive work, and to afford the students of Journalism an opportunity for actual practice in newspaper editing, managing and make-up.

The "Redwood." The "Redwood" is the University annual published by the students to serve as a record of University activities, and as an expression of the student life of the University.

The "Owl." The "Owl" is a quarterly literary magazine. This publication offers a medium for literary work among the students. The name was taken from the first literary magazine of the University founded in 1869.

The "Santa Clara Lawyer." The "Santa Clara Lawyer" is a quarterly publication issued by the College of Law. The "Lawyer" affords our alumni current items of interest concerning the College of Law.

ATHLETICS

Athletics at Santa Clara are directed by the Athletic Council and the Faculty Representative for Athletics, by whom arrangements for intercollegiate and intramural contests are made.

Block S. C. Society. Members of the University teams who have secured the University letter are organized into the Block S. C. Society in recognition of their athletic ability and for the encouragement of a high standard of athletic conduct.

The Athletic Managers Association is composed of volunteers from each class who cooperate with the management in the conduct of games and the care of equipment.

Intramural Sports. Facilities for the athletic activities of the student body are provided by the gymnasium with its basketball court, boxing and wrestling room, and swimming pool; by centrally located tennis and handball courts; and the extensive athletic fields for football, baseball, track, softball and volleyball. A program of intramural athletics in which all students are encouraged to participate is conducted under the direction of the Director of Physical Education.

AFFILIATED ORGANIZATIONS

The Faculty Club. This is an organization of the religious and lay members of the Faculty, organized as a means to become better acquainted with the problems confronting the various departments and to mould the Faculty into a solid working unit. Educational, scientific and ethical problems are discussed by the members.

The Faculty Bulletin. The Faculty Bulletin is a monthly publication which is produced expressly "for and about the faculty" of the University of Santa Clara.

Alumni Association. The object of this association is to strengthen and perpetuate college friendships, to preserve in former students a warm regard for Alma Mater and a lively memory of the substantial benefits she has bestowed, to cherish and advance her interests, to maintain her honor

and sustain her reputation by manly and honorable conduct. Officers of the Association are:

Francis J. Murphy, '44, President
Kenneth J. Friedenbach, '41, First Vice-President
John F. O'Hara, '39, Second Vice-President
Donald Driscoll, '42, Third Vice-President
Richard J. Lautze, '39, Treasurer
Hall G. Haynes, '50, Secretary

The activities of the Alumni Association are recorded in the quarterly "Santa Claran," published and distributed to members of the Association by the Office of the Alumni Secretary.

PRIZES AND AWARDS

The following extraordinary prizes are open to competition on the dates announced in the University Calendar. The Faculty Committee on Scholastic Standing reserves the right not to award any of these prizes in the absence of sufficient competition or a meritorious grade of scholarship. No one is eligible to compete a second time for a prize which he has already won, except after an interval of one year. Students who have not been in attendance for both semesters may not compete.

GENERAL ACHIEVEMENT AWARDS

Nobili Medal. An annual prize of a gold medal founded by Joseph A. Donohoe, Esq., in honor of the first president of Santa Clara, Rev. John Nobili, S.J., to be given to the student who shall be judged outstanding in personal conduct, school activities, and studies.

Two Silver Medals to be given to the following students who become most distinguished for good conduct and application to study.

1. The most distigusihed **Resident** student.
2. The most distinguished **Non-Resident** student.

COLLEGE PRIZES

Business Administration Prize. An engraved key given by the Business Administration Association to the senior in the College of Business Administration who shall have made the greatest contribution to the College of Business Administration.

The Chargin Prize. An annual prize of $50 to be given, in honor of Mr. and Mrs. Joseph A. Chargin, Sr., to the senior in the College of Law who has maintained the highest class average in his law course.

Delta Sigma Pi Key. An engraved key given by the Delta Sigma Pi to the senior in the College of Business Administration with the highest scholastic average.

The Isabel Jones Prize. An annual prize of one hundred ($100) dollars donated in honor of Mrs. Isabel Jones by her husband, Mr. Eliot Jones, to be given to the senior student of the College of Business Administration who is judged by the Faculty of that College to be outstanding in scholarship.

The Orella Prize. An annual award of $25.00 established in 1915 by the late Dr. Firmin R. Orella, B.S. '89, and founded in 1945 by his wife, Albertine S. Orella, to be given to the senior student in the departments of science who attains the highest average in scientific subjects during the junior and senior years.

The Schwartz Prizes. Two annual prizes of one hundred ($100) dollars each, donated in 1955 by Mr. Sidney L. Schwartz of San Francisco to be given to students submitting papers in Finance and Business or

Economics which shall be judged outstanding by the Faculty of the College of Business Administration.

DEPARTMENTAL PRIZES

The Religion Prize. A purse of fifty ($50) dollars, given by the President of the University (1950), to be awarded annually to an upper division student, for proficiency in religion, selected on conditions set down by the Religion Department.

Santa Barbara Medals. Four gold medals given by the President of the University will be awarded annually, on the recommendation of the Professor in Military Science and Tactics, to the outstanding cadet in each of the four years of training.

The Sourisseau Prize. An annual prize of seventy ($70) dollars founded in 1955 by Miss Eva Sourisseau of San Jose in honor of her parents and family, to be given to the senior student of the University who shall be selected by the Department of Philosophy for outstanding Philosophical achievement.

The Michael Shallo Prize in Political Science. An annual prize of fifty ($50) dollars founded in 1955 by the University in honor of Father Michael Shallo, S.J., Professor of Political Philosophy, to be given to the student of the University selected by competition as the most proficient in Political Science.

The Civic Club Italian Prizes. Three Prizes totaling fifty ($50) dollars contributed in 1949 and thereafter by the Civic Club of San Jose, to encourage the study of Italian language and culture, to be given to the students attaining the three successively highest grades in the study of Italian.

The President's Engineering Prize. A prize of $100 given by the President of the University for the senior class student in the College of Engineering who has earned the highest average during his undergraduate years in the College.

The Medal of the Association of the Army of the United States. The Medal of the Association of the Army of the United States will be awarded to formally enrolled Advanced Curriculum members of the ROTC for meritorious accomplishments during a particular school year. Under this premise the Medal will be awarded to the outstanding cadet of each class of the Advanced Curriculum of ROTC for exceptionally meritorious academic attainments, exemplary conduct, efficiency and fidelity.

DEBATING PRIZE

The Ryland Prizes. The Hon. Caius T. Ryland founded in 1897 an annual purse of $45.00, leaving its disposition to the discretion of the Faculty. This the Faculty, after due consideration, assigned to the University Literary Congress, organized February 22, 1857, establishing the Ryland Debate to be held yearly between the two branches, the Senate and the House, and divided the purse into three prizes of $20.00, $15.00 and $10.00, respectively. By an agreement between these societies, each in turn selects the subject to be debated, and the other is granted the choice of the side it will defend.

DRAMATIC PRIZE

The William H. Leahy Prize. A gold watch, valued at $50.00. This prize was founded in honor of Mr. William Leahy by his wife and his brother, Mr. James Leahy, for the winner of the Dramatic Art Contest.

LITERARY PROFICIENCY PRIZES

The Handlery Prize. An annual prize of $50.00 founded by Mrs. Rose Handlery in memory of her son, Raymond, of the class of 1934 to be given to the senior student of the University who will have contributed most to the success of any of the University student publications.

The McCann Prize. Annual prize of $25.00 founded in honor of Daniel B. McCann, B.S., '84, to be given for the best short story.

The Redwood Prize. Annual prize of $25.00 founded in 1908 by the executive committee of "The Redwood," and given for the best essay on an historical subject.

The Shipsey Poetry Prize. An annual prize of $50.00 founded in 1954 by Richard M. Schmidt in honor of the late Reverend Edward Shipsey, S.J., to be presented to the student selected by the Faculty of the Department of English for the most outstanding contribution in the art of Poetry.

ORATORICAL PRIZE

The Owl Prize. An annual prize of $25.00 founded by the directors of the former College Magazine, "The Owl," to be given to the winner of an oratorical contest in the University.

ADMISSION TO THE UNIVERSITY

Those who wish to apply for admission to the University should proceed as follows:

1. Secure an application form from the office of the Registrar either by mail or by calling at the office. This should be done in the Fall preceding the desired Fall date of entrance.
2. Send the completed application to the office of the Registrar in February preceding the desired Fall date of entrance, together with the Application Service Fee of five dollars ($5.00). Applications filed after September 1 have no guarantee of being considered by the Committee on Admissions.
3. Request all high schools or colleges previously attended to send directly transcripts of completed preparatory work. These records should be prepared and sent to the Registrar during February or March.
4. Three testimonial letters certifying to the good moral character of the applicant should be sent also in February or March.
5. All applicants are required to take the Scholastic Aptitude Test of the College Entrance Examination Board. Candidate for admission as **Majors in Mathematics or the Natural Sciences** must present, also, **Achievement Test** scores in Physics, Chemistry and Advanced Mathematics. It is recommended that these tests be taken no later than March preceding the desired date of entrance. Arrangements for these tests are made directly with the Educational Testing Service, Box 27896, Los Angeles 21, California, or Box 592, Princeton, New Jersey.

No application for admission can be considered until the applicant has complied with all five points above.

Scholarshp Credentials

Candidates for admission to any of the undergraduate courses of the University must qualify:

(a) For admission to Freshman standing:
By presenting evidence of graduation with better than average grades from the regular four-year high school curriculum of the Preparatory Department of this University (Bellarmine Preparatory School, San Jose), or from a similar curriculum in an approved high school.

(b) For admission to the undergraduate program of his choice:
By presenting high school courses in accordance with the appropriate pattern indicated below:

	A.B.	B.S. B.S.C.	Engr.
English	3	3	3
Latin*	4		
Foreign Language*		2	2
Algebra	1**	1**	2
Goemetry	1	1	1
Trigonometry			½
History	1	1	1
Laboratory Science	1	1	2
Optional, advanced course in Foreign Language, Mathematics or Laboratory Science	1	1	
Unprescribed units	3	6	4½

*Students entering with only two units of Latin for the A.B. program will be given an opportunity to make up these deficient units for credit during the first two years of college. Students who in rare cases are accepted without two years of Foreign Language (these units must be in

the same Foreign Language) will be given an opportunity to make up these deficient units but for no credit towards their degree.

**Students planning to major in Science (Biology, Chemistry or Physics) should present a B average in high school subjects and should present the same number of units in mathematics and science as those required for Engineers.

It is strongly recommended that the unprescribed units be in Mathematics, Languages (preferably Latin), Laboratory Sciences, or Social Studies.

No credit is ordinarily allowed for physical education or music. One unit each may be accepted for commercial subjects, vocational subjects, and mechanical drawing.

Half units will be accepted only when presented in addition to integral units in the same subject or in half year subjects which constitute a complete course in themselves, e. g., Solid Geometry. Any two of the biological sciences (Physiology, Botany, Zoology) may be combined into a continuous year's course equal to one unit.

A matriculation deficiency in a subject continued in the University in which the deficient student attains a grade C, may be removed by the proper faculty, on the recommendation of the instructor. Students, however, are cautioned not to assume in advance that this will be done.

Admission to Advanced Standing

Admission to advanced standing is by specific action of the Committee on Academic Standing, which will evaluate all credits presented and determine the rating of the candidate.

Students from other institutions of recognized collegiate rank, including Junior Colleges with well established courses, may be admitted to such standing and upon such terms as the Committee shall deem equitable. Every such candidate is required, besides the prescribed testimonials of character and scholarship, to present a catalogue of the institution in which he has studied, and a full statement, duly certified, of the subjects he has therein completed and of the subjects there presented for entrance. No student will be considered unless he be in good standing at the last college attended. Good standing is taken to mean that the student is not no academic or disciplinary probation or suspension. The University reserves the right to determine after a test of at least one semester the amount of credit that the applicant may receive, and meanwhile he shall have the status of an unclassified student.

Admission of Special Students

Candidates for admission as special students must be persons of mature age whose desire is to take up special work in one department or in one subject with its relative branches. Such special students are not candidates for a degree, but they may become candidates by satisfying the requirements for a regular curriculum. No one will be admitted directly from a secondary school to the status of a special student. Entrance examinations in the subjects of fundamental importance for the work proposed will be assigned in practically all cases. Registration as a special student is for one semester only and no one may register for less than ten hours. Re-registration will be refused if the student has not shown earnestness and definiteness of purpose or if his work has been unsatisfactory in whole or in part.

Admission of Foreign Students

Candidates for admission who come from foreign countries must present original and complete educational credentials, together with a catalogue giving full description of the courses. Provisional registration may

be given pending verification of the record and until the student concerned has successfully completed one semester's work of not less than twelve hours when permanent matriculation may be given. Students from other than English-speaking countries must present a score in the English achievement test of the College Entrance Examination Board; and, in addition, possess sufficient knowledge of English to carry satisfactorily their class work.

REGISTRATION

Directions for registering are mailed to each applicant with his letter of acceptance.

The Committee on Admissions acts on applications for entrance to the University during the early Spring and will notify at that time by letter all accepted applicants.

Candidates, upon receipt of final notification of the acceptance of their applications, are obliged to forward a guarantee fee of fifty dollars ($50). This is not an additional charge, but will be credited to the student's account after registration. It will be forfeited only if the student fails to give notice of cancellation by August 1.

At the time of their acceptance for entrance to the University all candidates will receive a medical examination form which must be filled out completely and signed by a physician and returned to the University before the student registers. Candidates who do not present the form before registration must do so before the end of the first two weeks of the semester.

Due to the fact that registration in the separate colleges of the University is limited, each acceptance is for a specific college, hence, a student will not be permitted to register in any college except the one for which he has been accepted. Any student who desires to change his curriculum or to cancel his reservation must do so by August 1.

Before registering for instruction in any department, the student must obtain a card signed by the Treasurer of the University, showing that a satisfactory settlement of his account has been made. This card is handed to the Registrar, from whom the student will receive his registration forms.

FRESHMAN ORIENTATION

Students accepted for the Freshman Class in the Fall of each academic year are brought to the Campus for Registration three days before the upper classmen for Placement Examinations and Orientation Lectures. A battery of Standard tests designed to measure the academic proficiency of the entering Freshman is given during these days. The test periods are interrupted by lectures on the traditions of the University, its organization, and the opportunities in religious, academic and social activities. All entering Freshmen are required to participate.

Examination in Subject A

All lower division entrants in the colleges at Santa Clara must, at the time of their first registration in the University, take an examination, known as the Examination in Subject A, designed to test their ability to write English correctly in spelling, grammar, diction, sentence structure and punctuation.

All students who do not pass in the examination in Subject A will be required to take, immediately after their failure, a course of instruction known as the Course in Subject A, without unit credit toward graduation. This course will be given each half year two hours a week for the semester, beginning one week after the examination. Every student who is required to take the course in Subject A will be charged a fee of $10.00 and the charge will be repeated each time he takes the course.

ACADEMIC STANDARDS

No student may carry less than 12 hours or more than 19 hours per semester without the approval of his Dean. A petition to elect excess credit hours will be considered only for Advanced Military Science or for students whose scholastic ability has been demonstrated, the usual requirement being a B average.

Quality of Work

A student's grade of scholarship is given according to the following schedule:

Above passing:	Below passing:
A, Excellent	F, Failed
B, Good	I, Incomplete
C, Average	W, Withdrawn
D, Inferior	

Incompletes

A student may be reported incomplete if, due to unavoidable absences, some essential portion of his work in the course remains unfinished after the final examination. An incomplete reverts to a failure unless the unfinished work is made up under the direction of the instructor within a period of four weeks after the start of the following semester.

Failures

A grade of F at the close of a semester indicates a failure. A failure in a subject means that the student must repeat the work in class the next time it is given if he wishes to receive credit for the subject.

Dishonesty in Examinations

A student guilty of dishonesty in examinations will forfeit the credit for the respective course. In special cases and on advisement, the faculty may impose a penalty involving even dismissal from the institution.

Repetition of Courses

A student may with permission repeat a course under the following conditions:

(1) Repeating a course in which a "D" or "F" grade was made on the first attempt.
Sign up for the course with the letter "R" following the units, as 3R. Each time the course is taken the student will be charged with units attempted and will receive the grade points earned. Unit credit is given only once for a repeated course and is recorded the first time the course is passed.

(2) Students repeating a course in which they formerly received a grade of "C" or better will receive no unit credit.

Probation and Suspension

A student who during any semester fails to maintain a satisfactory average will be put on probation in accordance with the University regulations printed below. A student on probation must prove that he has the ability to earn a C average in a normal academic program during the semester he is on probation. Students who fail to earn a C average during this period will be subject to disqualification, unless, in the opinion of the Committee on Academic Standing, there is good reason to extend the probation for one more semester.

A Freshman who, in his first semester, fails to attain a grade point average of 1.70 or in his second semester fails to maintain a grade point average of 2.00 for the year will be put on probation.

All students to be eligible to advance to the upper division of their college must have a grade point average of 2.00 at the end of their Sophomore year.

Sophomores, Juniors and Seniors who do not maintain a 2.00 average in each semester will be put on probation.

The grade point average is the number of grade points earned divided by the number of unit hours attempted.

Probation continues through an entire semester. A student who is on probation will not be permitted to represent the University in any activity.

Academic Suspension

A student who fails in two successive semesters to attain a grade point average of 2.00 is subject to academic suspension. A suspended student may reapply for admission at the end of the period during which he is suspended.

Academic Disqualification

If in the opinion of the Dean, a student's work is so poor as to justify the action, or if it is reasonably certain that he does not possess the qualifications necessary for success in the particular field or profession to which he aspires, he may be disqualified from further attendance. A student who has been disqualified is excluded from further attendance for an indefinite period, the presumption being that he is permanently disbarred from the University.

A Freshman who, in his first semester, fails to attain a grade point average of 1.40 or, in his second semester, fails to attain a grade point average of 1.70 will be disqualified from further attendance at the University.

Re-instatement

A student who has been academically suspended from the University may not be readmitted accept after the lapse of the period for which he was suspended and through the special action of the Committee on Admissions. If he spends the intervening period in another institution he must present grades of such quality for a full schedule as to give promise of success in the remainder of his college work. His status if readmitted will be "probation".

Attendance

The Universty requires regular attendance of students at scheduled classes, assemblies, the annual retreat and all general University religious and academic functions. Absence and tardiness even when excusable effect class standing.

It is the prerogative of each instructor to assess penalties for tardiness in attendance at class.

Any student who, during a semester, has been absent from a class more than twice the number of times that class meets per week is disqualified from that course and will receive a failure in the subject. Attendance records are kept from the first day of class instruction.

If in a student's opinion, there should be a compelling cause for his absence, such as illness, he may present a written petition to the Committee on Academic Standing. No appeal will be allowed from the Committee's decision.

Written Examinations

Written examinations are held every six weeks in all subjects and in all departments. They are also held twice a year upon the work done during the preceding semester. After each examination, a report on the progress of the student is prepared by the Registrar's office and mailed to the parent.

A student guilty of dishonesty in examination will be given a failure for the respective course. In special cases the administration may impose a penalty involving even dismissal from the institution.

Credit Hour Defined

A semester hour is the standard for computing the amount of a student's work. A semester hour is defined as one lecture or recitation one hour in length per week for one semester. Three hours of laboratory work are equivalent to one recitation hour. Two hours of preparation on the part of the student are required for each hour of lecture or recitation.

Credit Points

A candidate for a degree must gain not only the number of credit hours required in his college, but his work must reach a certain standard of excellence. In addition to the required number of credit hours necessary for graduation, each student must earn double the number of credit points, or an average mark in all subjects of C or better.

For a grade of A in a given course a student will receive four times as many credit points as there are credit hours in the course; for a grade of B, three times as many credit points; for a grade of C, twice as many credit points; for a grade of D, as many credit points as credit hours; while an F will be charged as attempted, but no credit points will be given. To remove failure see "Repetition of Courses".

For example: A four hour course in which the student receives the grade of A gives 16 credit points; if the grade is B, 12 credit points; if C, 8 credit points; if D, 4 credit points; if the grade is F, no credit points.

Thus, in a course where 128 credit hours are required for graduation, the maximum number of credit points that can be secured by a student is 512; the minimum, 256.

Candidates for graduation must attend any course of lectures or any other exercises that have been or may be authorized and equipped by the Faculty, even though such courses receive no value in credtis.

No student will be advanced to full junior standing who has less than 64 credit hours and 128 credit points by the end of his sophomore year.

Electing Studies

All students must inform the Dean of the College in writing as to their choice of subjects, and no one may enter upon a course or relinquish one already taken up without his advice and consent, upon penalty of receiving

no credit in the first case, and a failure in the subject abandoned, in the second. All such approved changes in study must be reported by the student to the Office of the Registrar.

Dropping of Courses

Each student is held accountable for every subject on his program card. Any course from which a student withdraws without a permit signed by the Dean of the College will be marked as a Failure on his permanent record. Permission to withdraw from a course without penalty after the first six weeks period will be granted only for the gravest reasons.

No student will be granted permission to register in any course two weeks after it starts.

Changing of College or Major

No student, except a freshman on probation, may expect favorable action on a request to change from one college to another unless he is able to present at the time of change on over-all C average. This will not be true when a student wishes to change from one major to another within the same college. A student who wishes to request a change must file a petition with the Registrar two weeks before the beginning of the semester. If a minor, a student must present written consent of parent or guardian.

REQUIREMENTS FOR GRADUATION

In order to be eligible for a degree a student must meet the requirements laid down by his particular college and department.

Residence of at least one year immediately preceding graduation is required for the granting of any degree.

Course in American History and Institutions Required for Graduation

All candidates for the bachelor's degree must satisfy the "Requirement of American History and Institution." This requirement may be satisfied in any of the following ways:

1. By passing an examination in American History and Institutions. No unit credit will be given for passing this examination.
2. By completing one of the following: Political Science 20A-20B, Political Science 2; Political Science 113; History 171A or 171B.
3. By presenting credit for acceptable courses taken at another collegiate institution.

Religion courses required of all Catholic students (see pg. 51).

Military Science requirements (see pg. 52-53).

Candidacy for Degree

Every student who wishes to become a candidate for a degree in any College of the University must, at the beginning of his senior year after consulting the Dean of his College, file with the Registrar a written statement of the degree to which he aspires and the work which he proposes to do. He will then be informed whether he may be admitted as a candidate for such degree and whether the work proposed is satisfactory. Any change of purpose must be similarly announced and approved.

Graduation Honors

A candidate for an undergraduate or professional degree who has a grade point average of 3.40 graduates **Cum Laude;** one who has a grade point average of 3.65, **Magna Cum Laude;** and one who has a grade point average of 3.85, **Maxima Cum Laude.**

Graduation honors are based on the work of the four years.

The University reserves the right to exclude from graduation honors students who have been subject to disciplinary probation, or who, in the judgment of the Committee on Academic Standing, are lacking in acceptable qualities of character or good citizenship. The work of transfer students will be interpreted in terms of the grades of this University.

Numbering of Courses

Courses in the University are divided into three groups. The Lower Division, comprising the studies in the freshman and sophomore years; the Upper Division, comprising the studies in the junior and senior years, and leading to the Bachelor's degree; and Graduate Courses, comprising graduate studies, and leading to advanced degrees.

Courses in the Lower Division are numbered from 1 to 100. Courses in the Upper Division are numbered from 101 to 200. Courses for Graduate students are numbered from 201 up. Under certain conditions Lower Division courses may be taken for Upper Division credit, but in such case it is expected that a higher standard of work shall be done and the instructor will assign additional work for such students.

Transcripts and Credentials

Students wishing Transcripts of Record in order to transfer to another school or for any other purpose should make early and seasonable application for the same. No such statements will be made out during the busy periods of examination and registration. Credentials which are accepted for admission become the property of the University and are kept permanently on file.

Other credentials which are presented for admission by students who are not accepted are also the property of the University, but are not kept beyond a period of two years.

Sessions

The first semester begins in September and ends about the end of January.

The second semester begins in February and ends about the third week of June.

As in most departments of the University new courses are not begun in February, students desiring to matriculate at the beginning of the second semester can be received only on condition that they are prepared up to the point then reached by the class which they desire to enter.

Summer School Courses

The University offers a six weeks Summer School beginning in late June and ending in early August. Students planning to attend Summer Sessions at other institutions should, if they wish to receive credit for their courses, secure in advance from the Dean of their College written approval of the College or University they wish to attend and the specific courses they wish to take.

No credit will be allowed for any summer course completed with less than a grade of "C". Moreover, the Dean of the College may require an examination to certify the grade in any summer course.

RELIGIOUS TRAINING

To cultivate the heart, no less than to develop the intellectual and physical faculties of the student, is a duty kept constantly and sacredly in view.

As the University professes the Catholic religion, the exercises of religious worship are Catholic; but members of any religious denomination are reecived, provided they be willing, for the sake of order and uniformity, to conform respectfully to the religious observances of the University. All students are required to attend chapel lectures and the lectures of the annual Retreat.

Without religion there can be no education in the truest sense of the word, that is to say, no complete and harmonious development of the intellect and heart of man. The University holds, furthermore, that religious truth, being definite and certain, may be taught with as much exactness as language or any other branch of knowledge. Accordingly every Catholic student is required to complete successfully a course in Christian Doctrine each semester of undergraduate attendance, and two periods weekly are devoted to it in every class of every course. Academic credit is allowed for this work. Students who are excused from taking Religion courses, must present an equivalent number of units in another field in order to meet the graduation requirements of their college.

STUDENTS' HEALTH SERVICE

The University exercises supervision over the health of students. A physician is in daily attendance at the University without extra charge for minor cases. A certificate of health from the home physician is required of each student at the time of registration.

In accordance with the recommendation of the State Board of Health all students must present a certificate of vaccination or be vaccinated by one of the University physicians.

The University assumes no responsibility for injuries sustained by any student during play, in the swimming tank, in the gymnasium, or during athletic contests.

MILITARY SCIENCE

The University maintains a Senior Division Unit of the Reserve Officers Training Corps, to provide facilities whereby students can better prepare themselves for their citizenship responsibilities. The ROTC mission is to produce junior officers who have the qualities and attributes essential to their progressive and continued development as officers in the Army of the United States. The Course affords a means for practical training in organization, leadership, and discipline which will be of value to the graduated students in an industrial or professional career.

The training program followed is a general military science curriculum.

This is designed to provide the student with a background in military history, weapons, discipline, command and leadership that will qualify him to serve as a small unit leader in any branch of the Army.

The program consists of a two-year basic and a two-year advanced curriculum. All undergraduates are required to take the two-year basic program unless exempted by the Faculty Committee on Petitions. They may petition for relief from this requirement but they must report to the Military Science Department at initial registration and be enrolled in Military Science, pending action on any petition submitted.

Petitions for exemption from, or deferment of, military training will not be received after the end of the first week of attendance in the semester except for physical disability incurred following enrollment.

Exemptions from military training may be granted in the following cases:

1. Veterans of any of the Armed Service.
2. Students who have reached the age of 23 years at the time of initial registration at the University.
3. Physically disqualified as certified by the University Physician.
4. Non-citizens of the United States.
5. Students whose military training at other universities or military academies is accepted by the Professor of Military Science and Tactics as fulfilling the requirements.
6. Students entering the University with upper division standing.

Students who enter the University with advanced standing are liable for completion of the courses in Military Science according to the following schedule.

Students who have received advanced standing both in time (actual semesters or terms) and in units of credit amounting to:

Any credit of less than 12 units	4 Semesters
One semester or term and at least 12 units	3 Semesters
Two semesters or terms and at least 24 units	2 Semesters
Three semesters or terms and at least 36 units	1 Semester
Four semesters or terms and at least 48 units	None

Enlisted membership in a Reserve Unit or a Reserve program of any of the Armed Services is not recognized as a valid reason for exemption from the mandatory participation in the basic program.

Students exempted from military training must offer an equal number of units of other work in lieu of military science and tactics in order to receive a degree. Selection of these courses must be approved by the Dean of the College in which the student is registered.

A veteran is, as stated, exempt from the military training requirements. His military service will normally qualify him for entrance into the Advanced Curriculum at the start of his Junior year. Veterans are encouraged to consider this opportunity to obtain a commission in the United States Army Reserve.

Admission to the advanced courses is limited to those students who will not have reached their 28th birthday by date of their commission (graduation). They must also have completed the Basic curriculum, or have equivalent credit, and pass prescribed academic and physical tests.

Students who meet the above requirements will be selected by the President of the University and the Professor of Military Science and Tactics for continuance in the Advanced Program.

Advanced Students are under contract with the government to complete their training unless sooner discharged for the convenience of the government and will be paid a monthly monetary allowance at a daily rate equal to the value of the Army ration ($.90 per day) for a period of not to exceed 595 days.

Advanced Students are required to attend one summer training camp of six weeks duration. The student will normally attend summer camp between his Junior and Senior year. He will be paid at the rate prescribed for a soldier of the 1st grade ($78.00 per month) and in addition will be allowed a travel allowance of 5 cents a mile to and from camp.

Students who complete the Advanced Program are eligible for appointment and commission by the President of the United States as officers in the United States Army Reserve. Reserve commissions are tendered in all branches of the Army except the Medical and Dental Corps. The branch in which a student is commissioned is determined by his preference,

leadership potential, academic background, recommendations of the faculty and staff and needs of the service. A newly commissioned officer will attend his branch school upon being ordered to active duty.

A student who has received his academic degree and has been designated by the President of the University and the PMS&T as a "distinguished military graduate" may, upon application, be commissioned directly in the Regular Army.

Uniforms and text books are furnished by the Government without cost to the student. The Advanced students are furnished a complete uniform which upon completion of the program they are allowed to retain for use on Active or Reserve duty.

At the end of the school year, or if the student leaves the University prior to that time, all Government property including texts must be returned to the Military Department. Any loss or damage to equipment must be paid for by the student.

Each student who signs the ROTC deferment agreement is placed in classification 1-D which defers him from active service while he is a student in good standing at the University and until he receives both his baccalaureate degree and his reserve commission as a second lieutenant. This deferment is cancelled immediately upon the withdrawal from the ROTC program, basic or advanced. Freshmen are not permitted to sign a deferment agreement until they have reached their 18th birthday and have completed successfully the first semester.

RESIDENCE

The University maintains several residence halls for the convenience of those students whose homes are not within commuting distance. However, since these facilities are inadequate to house all applicants, students are permitted to live off campus by fulfilling any one of the following conditions:

1. Those living with parents or near relatives.
2. Students over 21 years of age.
3. Students with advanced standing under 21 years of age who have obtained written authorization from a parent or guardian.
4. Freshmen for whom no resident space is available at the time of acceptance may live off campus by fulfilling the above conditions (No. 3). However, they shall be expected to move on campus as space becomes available in the Freshman Halls.

DISCIPLINE

"To mould men after the model of the Man-God, and thus form them to serve their fellowmen, their country and their God; this is the ideal and the purpose of the University of Santa Clara."

The University believes that its educational ideals cannot be attained unless her students are well trained in the fundamentals of refinement, considerateness, and restraint. Christian civil society is definitely formed on the principle that we have obligations to our fellowmen, our country and our God. Where so many live so closely together as do the students at Santa Clara, it becomes necessary that certain regulations be set down to accomplish more easily the purpose toward which we are aiming. These regulations are not drawn up with the idea of restricting one or making life difficult; they are given as means of establishing good order, avoiding injustice or inconvenience to others, and insuring a situation conducive to study—the purpose for which students are attending the University of Santa Clara.

Matters pertaining to discipline are under the general direction of the Vice President for Student Affairs.

The following violations render those involved liable to expulsion:

1. The holding of meetings or forming of Clubs or Societies of any kind without the consent of the President.
2. Gambling, intoxication, the bringing of intoxicating liquors on the University premises or the patronizing of places where liquor is sold.
3. Absence from the Universiy at night without permission.
4. Possession or circulation of any books or writings of an immoral nature or obscene pictures.
5. Habitual obstinancy, insubordination, impertinence or any other character defect, because of which a student may be considered by the University as undesirable.

It is strictly forbidden for any student or group of students to haze any other student or subject him to any personal or physical indignity or treat him in such wise as may reasonably give offense.

After the Summer vacation, Christmas Holidays or other Recesses allowed by the President, students must report back to the University on the day appointed for Registration and the reopening of classes. Absence at these times may result in fines, deprivation of privileges or, at the discretion of the Faculty, exclusion from the University. Registration is not completed until a student has attended classes.

The University reserves the right to dismiss at any time a student who fails to give satisfactory evidence of earnestness of purpose in the serious work of college life. Dismissals may be made without specific charges, and, in some cases, perhaps on grounds that seem insufficient to students and parents. The University in these cases holds itself to be the more capable judge of what affects the interests of the institution and the student body.

Any student who wishes to keep his automobile on University premises must register the automobile with the Vice President for Student Affairs and must observe regulations established for traffic on the campus.

For additional and more detailed information concerning disciplinary policy consult the University Regulations booklet published annually by the Office of the Vice President for Student Affairs.

Eligibility for Extra-Curricular Activities

Except where otherwise specifically provided for by the Faculty, students taking part in public debates, oratorical or dramatic art contests or representing any department of the University in inter-collegiate athletic events, as well as all those who are appointed on the staff of the University publications or as officers of sudent organizations, or are elected as captains or officers of any society, are subject, at the time of their selection or appointment, to the following eligibility rules: (1) They must have no failures; (2) They must have attained an average of C in the last mid-term or semester examinations; (3) They must not be under censure. Candidates for student body President must present an average of C+ (2.50).

Any student admitted to the University on a scholarship or as a student worker who fails to obtain a semester average of C+ forfeits his right to his position or scholarship.

The registration of a student is deemed a recognition on his part and on the part of his parents or guardians of compliance with all the rules and regulations of the University, and acceptance of all conditions laid down in the catalogue.

Withdrawal From the University

When a student is to be withdrawn from the University either temporarily or permanently the Vice President for Student Affairs must be informed directly by either a parent or guardian. The student should then report to the Registrar for the Withdrawal Form.

College of Arts and Sciences

Alumni Science Hall

COLLEGE OF ARTS AND SCIENCES

CURRICULUM

The curriculum of the College of Arts and Sciences extends over a period of four years. It assumes that education is concerned with the mental and moral development of the whole man and that specialization in particular fields should rest upon a solid training in the liberal disciplines. For this reason the curriculum of the College of Arts and Sciences requires courses in the humanities, rhetoric, mathematics, natural sciences, social sciences, philosophy and religion. In the final two years concentrated work is offered in the fields of Biology, Chemistry, Economics, English, History, Mathematics, Philosophy, Physics, Political Science, Sociology and Spanish.

ENTRANCE REQUIREMENTS

To qualify for Freshman standing in the College of Arts and Sciences, applicants must be graduates of an accredited high school and must present no less than sixteen units including the following:

English	3 units
Foreign Language (One Language)	2 units
Mathematics (Algebra and Geometry)	2 units*
History	1 unit
Laboratory Science	1 unit *
Optional, advanced course in Foreign Language, Mathematics or Laboratory Science	1 unit

The remaining six units should be in solid college preparatory subjects rather than in the terminal and industrial courses. Additional courses in Foreign Language, Mathematics, Science, English and Social Studies are recommended.

The quality of the grades presented for entrance to the College of Arts and Sciences must be above average. In view of the fact that a C average is required to remain in the College or to receive a degree, it is obvious that something better than a C average should be presented for entrance. Grades of D cannot be accepted in fulfillment of the requirements for entrance to College.

All candidates for a Bachelor's degree are required to present sixteen units of Foreign Language. When two years of Foreign Language (these must be in one Foreign Language) are presented at entrance, four units are allowed, and twelve units (or two years) are required in College. Not more than two Foreign Languages may be presented in fulfillment of the Language requirement.

Students preparing to undertake **Graduate Studies** should take care early in their academic career to master the foreign languages required for research in their special field of interest.

***Students planning to major in Science or Mathematics** should present at entrance to College no less than two Sciences (Chemistry and Physics), and not less than three years of Mathematics (including Intermediate Algebra and Trigonometry.) Students entering the **general curriculum** may fulfill the Mathematics requirement by presenting two courses in Algebra. (Two units)

All candidates for admission must present scores from the **General Aptitude Test** of the College Entrance Examination Board. Candidates for admission as **majors in Mathematics or the Natural Sciences** must present, also, **Achievement Test** scores in Physics, Chemistry and Mathematics. It is recommended that these tests be taken no later than March preceding the desired date of entrance. Arrangements for these tests are made directly with the Educational Testing Service, Box 27896, Los Angeles 21, California.

DEGREES

The College of Arts and Sciences confers the degrees of Bachelor of Arts and Bachelor **of Science.**

The Bachelor of Arts degree is conferred on those students who in addition to satisfying the general requirements of the college concentrate on a major in the humanities or the social sciences.

The Bachelor of Science degree is conferred on those students who in addition to satisfying the general requirements of the college concentrate on a major in Mathematics or in the Life or Natural Sciences.

THE COMBINED DEGREE

The combined degree, by which a student is allowed to substitute for his senior year in college the professional courses of the first year of Law School, is awarded only to students, a) who have done all their undergraduate college work at Santa Clara; b) who have maintained not less than a B average in the Junior year in college; c) who complete with not less than a C average all the professional courses required in the first year of the Santa Clara College of Law and a course in Ethics approved by the Department of Philosophy; and d) who present not less than 128 units of work. (This minimum may not include units earned in Advanced Military Training.) Such students will be awarded the Bachelor's degree from the College of Arts and Sciences after completing the first year of law.

The College of Arts and Sciences does not award the combined degree to students who complete part of their undergraduate studies elsewhere, or who undertake their professional studies in Colleges not under the administration of the University.

THE PRE-MEDICAL AND PRE-DENTAL COURSE

Students entering the College of Arts and Sciences with the purpose of later going on to the study of Medicine satisfy all the requirements prescribed by the Council on Education of the American Medical Association by following the major in Biology. The curriculum is so arranged that the student may comply with the requirements for entrance to Medical schools in three years. However, **Medical Schools** generally prefer students with a college degree. It is therefore recomended that Pre-Medical students spend four years in their preparation and add such cultural courses to their schedule as will better fit them to pass with success through the vast field of experiences which await the physician in the practice of his profession. In this course, too, all requirements for entrance to standard **Dental Schools** are met.

NURSING EDUCATION

Students in training at the O'Connor Hospital School of Nursing are admitted to courses in the College of Arts and Sciences. These students are registered in the College and subject to all regulations governing the

admission and matriculation of students. Though these students are not registered for a degree program in the College of Arts and Sciences, the credit earned is transferable and applicable to a college degree.

The courses approved for student nurses will be found in the bulletin of the O'Connor Hospital School of Nursing.

PRE-LEGAL COURSE

Pre-legal requirements are met by students who follow the regular courses in the College of Arts and Sciences and earn sufficiently high grades. (See College of Law, pre-legal preparation, page 99.)

ORIENTATION OF FRESHMEN

The University provides Placement Examinations and orientation lectures for all Freshman Students during three days after Freshman registration in the Fall. In addition the College of Arts and Sciences presents a series of orientation lectures designed to acquaint each new student with the educational opportunities offered in the College, and to help him to become quite certain about his major interest by the end of the Freshman year. These lectures are given by the Dean, and the Chairmen of Departments offering a major. Freshman students are to attend these lectures. A grade indicating attendance will be recorded on each student's permanent record.

DIVISIONS OF THE COLLEGE

Lower Division

The first two years in the College of Arts and Sciences constitute the lower division. During this time, by studying some subjects prescribed by the college and some he elects, the student extends and deepens the knowledge brought from his secondary school, while, at the same time, he prepares to undertake work in a chosen field of concentration.

Specifically, the student is expected to complete the requirement in Foreign Languages (16 units, all but 6 units of which may be done in high school), the requirement in laboratory science (an 8 unit course in one science), the prescribed 10 unit course in English Composition (English 1A and 1B; English 48 or 49) and Public Speaking, the prescribed courses in Psychology (3 units) and Philosophy (9 units), the course in Western Civilization (6 units), and the prerequisites for the major work on which he will wish to concentrate in the upper division. In the lower division it is expected that the student will complete 68 units of the 128 units required for graduation, and that he will earn a C average. Catholic students must include in their program a one unit course in religion during each semester in college.

Science and Mathematics Majors. Because of the requirements in Science and Mathematics set down for students whose major field is Science, these students cannot be expected to complete all the prescribed General Education courses. They must meet, however, the minimum requirements for Foreign Language, Science, Philosophy and Religion; but it will be sufficient if, in addition to the Freshman English and Public Speaking courses, they present six additional units in Literature, and at least six units in the History of the United States. Courses in Political Science and Economics are recommended if these can reasonably be included in the curriculum.

General Education. Each student must plan to include the following courses in his curriculum: a) The Survey of English Literature; b) The

Principles of Economics; c) The Fundamentals of Political Science; or d) The Introduction to Sociology. These courses will assist the student to understand the environment in which he must live, and will prepare him for intelligent participation. For definite plans by which to schedule these courses see the suggested curricula drawn up for your assistance by major departments.

Upper Division

The third and fourth years in the College of Arts and Sciences constitute the upper division and are devoted to more advanced study and limited specialization. Admission to the upper division cannot be allowed until the student has selected a major department and has satisfactorily completed the courses and units set down for the lower division.

In the upper division a minimum of 24 units is devoted to advanced study in a particular field called the major. So that General Education courses may be continued, not more than 30 units of upper division work may be presented in the major field. A minimum of 12 units is devoted to advanced study in a second sequence of courses called the minor. Usually this minor is in Philosophy, but students who choose Philosophy as the major field should be careful to plan some other minor sequence. During the upper division years a 6 unit course in United States History is required. Each department requires certain specific courses which must be completed by students who choose to earn their degree in the department. These requirements will be found under the Description of Courses.

Electives. While fulfilling the specific course requirements set down in the curriculum by each department students may fill out their programs by electing courses of special interest. In electing courses, however, students should see that they have the proper preparatory or prerequisite course. If, in a particular case, a student desires a course for which he does not have the prerequisite, he should obtain the approval of the department head concerned and of his program adviser.

Other Requirements for Graduation

Degrees in the College of Arts and Sciences will be granted upon the following conditions:

1. The total number of units in college courses in the lower and upper divisions must be at least 128. Not more than 6 of these units may be presented in Advanced Military Science.

2. After fulfilling the requirements of the Lower Division, 60 units are required in the upper division, 40 of which must be from listed upper division courses. Where lower division units are taken for upper division credit, both the quantity and quality of such work must conform to upper division standards. Not more than 6 units in Advanced Military Science may be presented in fulfillment of these upper division requirements.

3. Candidates for graduation must complete a major of at least 24 and not more than 30 upper division units in either Classical Languages, Spanish, Philosophy, Economics, English, History, Political Science, Biology, Chemistry or Physics.

4. Candidates for a degree must submit an acceptable thesis on their major or some cognate subject. The thesis shall consist of not fewer than 5000 words and shall be typewritten on National White unruled paper 8½ x 11 inches. The subject must be submitted to the Dean of the College for approval and the thesis itself handed in completed according to the dates stated in the current calendar. The presentation of an acceptable thesis is an absolute prerequisite for admission to final examination. The

ultimate decision as to whether the effort merits the certificate or degree rests with the Committee on Theses.

5. Candidates for degrees are required to complete with a creditable score the Graduate Record examination in their major field, as well as the General Aptitude test. Dates for the local administration of these examinations will be announced and candidates for degrees who take the examinations on the assigned dates will be required to pay no fee. Those unable to take the examinations on the announced dates will need to arrange directly with the Educational Testing Service and pay the usual fees.

6. Residence of at least one year immediately preceding graduation is required for the granting of any degree.

PLANNED CURRICULA

To assist students in planning an adequate curriculum each department of the College has collaborated in drawing up a pattern of courses including the required lower division courses in general education, a major and minor sequence in upper division courses, and a number of suggested optional or elective courses for students with special interests. These curricula, however, should not be undertaken without first reading the instructions set down by each department under the heading "Departmental Requirements" and without the advice and approval of the head of the department in which the student is registered. Following are planned curricula recommended for majors in Biology, Chemistry, Economics, English, History, Mathematics, Philosophy, Physics, Political Science, Sociology and Spanish.

A CURRICULUM FOR BIOLOGY MAJORS*
(Including Pre-medical and Pre-dental)

Biology 101 and Chemistry 54 are quite variable as requirements for admission to medical and dental schools; Biology 102 and 107 are usually not required but are highly desirable. Biology 32 should be included in the curriculum of all who plan to proceed to graduate work in biology or to transfer to pharmacy.

Freshman

Fall Semester	Units	Spring Semester	Units
English 1A, Composition and Literature	3	English 1B, Composition and Literature	3
Psychology 1, Introductory Psychology	3	Philosophy 9, Logic	3
Religion 5, The Sacraments	1	Religion 6, The Life of Christ	1
Military Science 1, Basic Course, First Year	1½	Military Science 2, Basic Course, First Year	1½
Language 1, 3, or 5. Choice of: French or German. At least one year of language is required of all.	3	Language 2, 4, or 6. Choice of: French or German. At least one year of language is required of all.	3
Chemistry 1A, Inorganic Chemistry	5	Chemistry 1B, Inorganic Chemistry	5
	16½		16½

Sophomore

Fall Semester	Units	Spring Semester	Units
Philosophy 21, Philosophy of Nature	3	Philosophy 22, Philosophy of Man	3
Religion 7, The Existence of God	1	Religion 8, Creation	1
Military Science 3, Basic Course, Second Year	1½	Military Science 4, Basic Course, Second Year	1½
Language 3, 5, or further advanced. Unless language requirement of 16 units (high school and college combined) has already been satisfied.	3	Language 4, 6, or further advanced. Unless language requirement of 16 units (high school and college combined) has already been satisfied.	3

Public Speaking 1, Fundamentals of Expression	1
Chemistry 16, Quantitative Analysis	4
Biology 1A, General Zoology	4
	17½

Public Speaking 2, Fundamentals of Expression	1
Biology 1B, General Zoology or Biology 32, General Botany	4
Chemistry 35A, Organic Chemistry	3
	16½

Junior

Fall Semester	Units
Philosophy 109, Theory of Knowledge	3
Religion 107, The Redeemer and Redemption	1
Military Science 101, Advanced Course, First Year Optional and by arrangement	(3)
Chemistry 35B, Organic Chemistry	3
Chemistry 35C, Methods of Organic Chemistry	2
Physics 2A, General Physics	4
Biology 101, Vertebrate Anatomy	4
	17 or 20

Spring Semester	Units
Philosophy 112, Metaphysics	3
Religion 108, Moral Guidance	1
Military Science 102, Advanced Course, First Year Optional and by arrangement	(3)
Chemistry 54, Physical Chemistry or	3
Biology 156, General Ecology	(4)
Physics 2B, General Physics	4
Biology 102, Vertebrate Embryology	4
	15 or 16 18 or 19

Senior

Fall Semester	Units
Philosophy 151, Basic Ethics	3
Religion 109, Fundamental Apologetics	1
Military Science 103, Advanced Course, Second Year Optional and by arrangement	(3)
Biology 107, General Histology or Biology 111, General Physiology	4
Biology 104, History of Biology	2
History 171A. The United States	3
English 46A, Survey of English Literature	3
Elective. For students not taking Military Science	(3)
Economics 1A, Principles of Economics	
Political Science 1, Introduction	
Sociology 1	
	16 or 19

Spring Semester	Units
Philosophy 152, Social Ethics	3
Religion 110, The Sacrament of Matrimony	1
Military Science 104, Advanced Course, Second Year Optional and by arrangement	(3)
Biology 109, Histological Technique (only if Biology 107 has been taken)	2
Biology 110, Heredity	2
Biology 199, Research Techniques	1
History 171B, The United States	3
English 46B, Survey of English Literature	3
Elective. For students not taking Military Science	(3)
Economics 1B, Principles of Economics	
Political Science 2, Introduction	
Sociology 2	
	15 or 18

A CURRICULUM FOR CHEMISTRY MAJORS

Freshman

Fall Semester	Units
English 1A, Composition and Literature	3
Psychology 1, Introductory Psychology	3
Religion 5, The Sacraments	1
Military Science 1, Basic Course, First Year	1½
Chemistry 1A, Inorganic Chemistry	5
Mathematics 3A, Analytic Gemometry and Calculus	3
Students unprepared to begin this course will do Mathematics 1. This will require lengthening the course to five years.	
Public Speaking 1, Fundamentals of Expression	1
	17½

Spring Semester	Units
English 1B, Composition and Literature	3
Philosophy 9, Logic	3
Religion 6, The Life of Christ	1
Military Science 2, Basic Course, First Year	1½
Chemistry 1B, Inorganic Chemistry	5
Mathematics 3B, Analytic Geometry and Calculus	3
Public Speaking 2, Fundamentals of Expression	1
	17½

Sophomore

Fall Semester	Units	Spring Semester	Units
Philosophy 21, Philosophy of Nature	3	Philosophy 22, Philosophy of Man	3
Religion 7. The Existence of God	1	Religion 8, Creation	1
Military Science 3, Basic Course Second Year	1½	Military Science 4, Basic Course, Second Year	1½
Language, German 1, 3, or 5. German is recommended by American Chemical Society.	3	Language, German 2, 4, 6	3
Chemistry 16, Quantitative Analysis	4	Chemistry 35A, Organic Chemistry	3
Mathematics 4A, Analytic Geometry and Calculus	3	Mathematics 4B, Analytic Geometry and Calculus	3
Chemistry 20, Evaluation of Chemical Data	1	Physics 8, General Physics	4
	16½		18½

Junior

Fall Semester	Units	Spring Semester	Units
Philosophy 109, Theory of Knowledge	3	Philosophy 112, Metaphysics	3
Religion 107, The Redeemer and Redemption	1	Religion 108, Moral Guidance	1
Military Science 101, Advanced Course, First Year Optional and by arrangement	(3)	Military Science 102, Advanced Course, First Year Optional and by arrangement	(3)
Language, German 3 or 5	3	Language, German 4 or 6	3
Chemistry 35B, Organic Chemistry	3	Chemistry 150A, Physical Chemistry	3
Chemistry 35C, Methods of Organic Chemistry	2	Chemistry 116, Advanced Quantitative Analysis	4
Physics 9, General Physics	4	Physics 10, General Physics	4
	16 or 19		18 or 21

Senior

Fall Semester	Units	Spring Semester	Units
Philosophy 151, Basic Ethics	3	Philosophy 152, Social Ethics	3
Religion 109, Fundamental Apologetics	1	Religion 110, The Sacrament of Matrimony	1
Military Science 103, Advanced Course, Second Year Optional and by arrangement	(3)	Military Science 104, Advanced Course, Second Year Optional and by arrangement	(3)
Chemistry 101, Advanced Inorganic Chemistry	2	Chemistry 110, Advanced Quantitative Analysis or Chemistry 133, Identification of Organic Compounds	3
Chemistry 135, Theories of Organic Chemistry	2	Chemistry 130, Organic Preparations	2
Chemistry 150B, Physical Chemistry	3	Chemistry 180, Methods of Research	1
Chemistry 150C, Physical Chemistry Laboratory	2	Chemistry Electives. (Any elective courses offered)	3
Chemistry 180, Methods of Research	1	History 171B, The United States	3
History 171A, The United States	3		
	17 or 20		16 or 19

A CURRICULUM FOR ECONOMICS MAJORS

Freshman

Fall Semester	Units	Spring Semester	Units
English 1A, Composition and Literature	3	English 1B, Composition and Literature	3
Psychology 1, Introductory Psychology	3	Philosophy 9, Logic	3
Religion 5, The Sacraments	1	Religion 6, The Life of Christ	1
Military Science 1, Basic Course, First Year	1½	Military Science 2, Basic Course, First Year	1½
Public Speaking 1, Fundamentals of Expression	1	Public Speaking 2, Fundamentals of Expression	1
Language 1, 3, or 5. Choice of Latin, Greek, German, French, Spanish, Italian. At least one year of language is required of all.	3	Language 2, 4, or 6. Choice of Latin, Greek, German, French, Spanish, Italian. At least one year of language is required of all.	3

Science. One of the following with its laboratory.	
Biology 23, General Biology	4
Chemistry 2A, General Chemistry	
Physics 2A, General Physics	
Mathematics 2A, General Mathematics	(3)
Optional but highly recommended for students capable of doing 18½ units; students taking it may postpone Public Speaking to the next year.	
	16½ or 18½

Science. One of the following with its laboratory.	
Biology 24, General Biology	4
Chemistry 2B, General Chemistry	
Physics 2B, General Physics	
Mathematics 2B, General Mathematics	(3)
Optional but highly recommended for students capable of doing 18½ units; students taking it may postpone Public Speaking to the next year.	
	16½ or 18½

Sophomore

Fall Semester	Units
*English 48, Advanced Composition—Prose	2
Philosophy 21, Philosophy of Nature	3
Religion 7, The Existence of God	1
Military Science 3, Basic Course, Second Year	1½
Language 3, 5, or further advanced. Unless language requirement of 16 units (high school and college combined) has already been satisfied.	3
Economics 1A, Principles of Economics. Lower division prerequisite for the major.	3
History 2A, Western Civilization. This course may be used as a prerequisite for a minor in addition to Philosophy.	3
Electives. One of the following may be substituted for English 48:	(2)
Music 10A, History and Appreciation of Music	
Speech 10, Acting I	
	16½

Spring Semester	Units
*English 49, Advanced Composition—Poetry	2
Philosophy 22, Philosophy of Man	3
Religion 8, Creation	1
Military Science 4, Basic Course, Second Year	1½
Language 4, 6, or further advanced. Unless language requirement of 16 units (high school and college combined) has already been satisfied.	3
Economics 1B, Principles of Economics. Lower division prerequisite for the major.	3
History 2B, Western Civilization. The student should continue the course chosen during the Fall semester.	3
Electives. One of the following may be substituted for English 49:	(2)
Music 10B, History and Appreciation of Music	
Speech 11, Acting II	
	16½

Junior

Fall Semester	Units
Philosophy 109, Theory of Knowledge	3
Religion 107, The Redeemer and Redemption	1
Military Science 101, Advanced Course, First Year	(3)
Optional and by arrangement	
Economics 100, Principles of Statistical Method	4
Economics 114, Economic Theory	3
Social Studies, (Elect two)	6
Political Science 1, Introduction	
Sociology 1, Introduction	
History 171A. The United States	
English 46A, Survey of English Literature	
Philosophy 41A, History of Philosophy	
Education (any course approved by the Head of the Department)	
AN UPPER DIVISION COURSE for which the prerequisite has been completed.	
	17 or 20

Spring Semester	Units
Philosophy 112, Metaphysics	3
Religion 108, Moral Guidance	1
Military Science 102, Advanced Course, First Year	(3)
Optional and by arrangement	
Economics 116, American Economic History	3
Economics 122, Money and Banking	3
Social Studies (Elect two)	6
Continue the courses begun in the Fall semester.	
History 171B, The United States	
English 46B, Survey of English Literature	
Philosophy 41B, History of Philosophy	
Education (any course approved by the Head of the Department)	
AN UPPER DIVISION COURSE for which the prerequisite has been completed.	
	16 or 19

*English majors must complete English 48 and 49. Others may elect either course.

Senior

Fall Semester	Units	Spring Semester	Units
Philosophy 151, Basic Ethics	3	Philosophy 152, Social Ethics	3
Religion 109, Fundamental Apologetics	1	Religion 110, The Sacrament of Matrimony	1
Military Science 103, Advanced Course, Second Year Optional and by arrangement	(3)	Military Science 104, Advanced Course, Second Year Optional and by arrangement	(3)
Economics (any approved upper division course offered)	3	Economics 110, History of Economic Thought	3
Economics (any approved upper division course offered)	3	Economics (any approved upper division course offered)	3
Economics 190, Research Technique	1	Economics 190, Research Technique	1
Electives. Elect one of the following (two for those not taking Advanced Military Science)	3 (3)	Electives. Elect one of the following (two for those not taking Advanced Military Science)	3 (3)
History 171A, The United States		History 171B, The United States	
English 46A, Survey of English Literature		English 46B, Survey of English Literature	
Music 10A, History and Appreciation of Music	(2)	Music 10B, History and Appreciation of Music	(2)
Philosophy 41A, History of Philosophy		Philosophy 41B, History of Philosophy	
Education (any course approved by the Head of the Department)		Education (any course approved by the Head of the Department)	
AN UPPER DIVISION COURSE for which the prerequisite has been completed.		AN UPPER DIVISION COURSE for which the prerequisite has been completed.	
	16 or 17		16 or 17

A CURRICULUM FOR ENGLISH MAJORS

Freshman

See Curriculum for Economics Majors

Sophomore

Fall Semester	Units	Spring Semester	Units
*English 48, Advanced Composition —Prose	2	*English 49, Advanced Composition —Poetry	2
Philosophy 21, Philosophy of Nature	3	Philosophy 22, Philosophy of Man	3
Religion 7, The Existence of God	1	Religion 8, Creation	1
Military Science 3, Basic Course, Second Year	1½	Military Science 4, Basic Course, Second Year	1½
Language 3, 5, or further advanced. Unless language requirement of 16 units (high school and college combined) has already been satisfied.	3	Languages 4, 6, or further advanced. Unless language requirement of 16 units (high school and college combined) has already been satisfied.	3
English 46A, Survey of English Literature Lower division prerequisite for the major.	3	English 46B, Survey of English Literature Lower division prerequisite for the major.	3
History 2A, Western Civilization.	3	History 2B, Western Civilization. The student should continue the subject chosen in the Fall semester.	3
*English 48 and 49 are required courses for students majoring in English			
	16½		16½

Junior

Fall Semester	Units	Spring Semester	Units
Philosophy 109, Theory of Knowledge	3	Philosophy 112, Metaphysics	3
Religion 107, The Redeemer and Redemption	1	Religion 108, Moral Guidance	1
Military Science 101, Advanced Course, First Year Optional and by arrangement	(3)	Military Science 102, Advanced Course, First Year Optional and by arrangement	(3)

English (any two upper division courses offered for English majors)	6
Note: English majors must at some time include in their programs English 103 and 105, and two of the following: English 113, 114, 115, 116, or 122	
History 171A, The United States	3
Elective.	3
Political Science 1, Introduction Economics 1A, Principles of Economics Sociology 1, Introduction Philosophy 41A, History of Philosophy Music 10A, History and Appreciation of Music	(2)
Education (any course approved by the Head of the Department) AN UPPER DIVISION COURSE for which the prerequisite has been completed.	
	16 or 19

English (any two upper division courses offered for English majors)	6
Note: English majors must at some time include in their programs English 103 and 105, and two of the following: English 113, 114, 115, 116, or 122	
History 171B, The United States	3
Elective.	3
Political Science 2, Introduction Economics 1B, Principles of Economics Sociology 2, Introduction Philosophy 41B, History of Philosophy Music 10B, History and Appreciation of Music	(2)
Education (any course approved by the Head of the Department) AN UPPER DIVISION COURSE for which the prerequisite has been completed.	
	16 or 19

Senior

Fall Semester	Units
Philosophy 151, Basic Ethics	3
Religion 109, Fundamental Apologetics	1
Military Science 103, Advanced Course, Second Year Optional and by arrangement	(3)
English (any two upper division courses offered for English majors) (See note above regarding required courses)	6
English 190, Research Techniques	1
Elective. Elect one (two for those not taking Advanced Military Science) of the following: Political Science 1, Introduction Economics 1A, Principles of Economics Sociology 1, Introduction Philosophy 41A, History of Philosophy Education (any course approved by the Head of the Department) AN UPPER DIVISION COURSE for which the prerequisite has been completed.	3 (3)
	17

Spring Semester	Units
Philosophy 152, Social Ethics	3
Religion 110, The Sacrament of Matrimony	1
Military Science 104, Advanced Course, Second Year Optional and by arrangement	(3)
English (any two upper division courses offered for English majors) (See note above regarding required courses)	6
English 190, Research Techniques	1
Elective. Elect one (two for those not taking Advanced Military Science) of the following: Political Science 2, Introduction Economics 1B, Principles of Economics Sociology 2, Introduction Philosophy 41B, History of Philosophy Education (any course approved by the Head of the Department) AN UPPER DIVISION COURSE for which the prerequisite has been completed.	3 (3)
	17

A CURRICULUM FOR HISTORY MAJORS

Freshman

See Curriculum for Economics Majors

Sophomore

Fall Semester	Units
*English 48, Advanced Composition and Literature—Prose	2
Philosophy 21, Philosophy of Nature	3
Religion 7, The Existence of God	1
Military Science 3, Basic Course, Second Year	1½

Spring Semester	Units
*English 49, Advanced Composition and Literature—Poetry	2
Philosophy 22, Philosophy of Man	3
Religion 8, Creation	1
Military Science 4, Basic Course, Second Year	1½

*English majors must complete English 48 and 49. Others may elect either course.

Language 3, 5, or further advanced, unless language requirement of 16 units (high school and college combined) has already been satisfied.	3
History: History 2A, Western Civilization	3
Social Studies. (Elect one) Economics 1A, Principles of Economics Sociology 1, Introduction Political Science 1, Introduction	3
Electives. One of the following may be substituted for English 48: Music 10A, History and Appreciation of Music Speech 10, Acting I	(2)
	16½

Language 4, 6, or further advanced, unless language requirement of 16 units (high school and college combined) has already been satisfied.	3
History: History 2B, Western Civilization Students should continue the course chosen last semester.	3
Social Studies. (Continue the course begun in the Fall semester) Economics 1B, Principles of Economics Sociology 2, Introduction Political Science 2, Introduction	3
Electives. One of the following may be substituted for English 49: Music 10B, History and Appreciation of Music Speech 11, Acting II	(2)
	16½

Junior

Fall Semester	Units
Philosophy 109, Theory of Knowledge	3
Religion 107, The Redeemer and Redemption	1
Military Science 101, Advanced Course, First Year Optional and by arrangement	(3)
History 101, Historical Methods	2
History 171A, The United States	3
Social Studies. (Elect one) Economics 1A, Principles of Economics Sociology 1, Introduction Political Science 1, Introduction AN UPPER DIVISION COURSE for which the prerequisite has been completed.	3
English 46A, Survey of English Literature	3
	15 or 18

Spring Semester	Units
Philosophy 112, Metaphysics	3
Religion 108, Moral Guidance	1
Military Science 102, Advanced Course, First Year Optional and by arrangement	(3)
History (any upper division course offered)	3
History 171B, The United States	3
Social Studies (Continue the course begun in the Fall semester) Economics 1B, Principles of Economics Sociology 1, Introduction Political Science 2, Introduction AN UPPER DIVISION COURSE for which the prerequisite has been completed.	3
English 46B, Survey of English Literature	3
	16 or 19

Senior

Fall Semester	Units
Philosophy 151, Basic Ethics	3
Religion 109, Fundamental Apologetics	1
Military Science 103, Advanced Course, Second Year Optional and by arrangement	(3)
History (any two upper division courses offered)	6
History 198, Research Techniques	1
Electives. Elect one of the following (two for those not taking Advanced Military Science). Economics 1A, Principles of Economics Sociology 1, Introduction Political Science 1, Introduction Philosophy 41A, History of Philosophy	3 (3)

Spring Semester	Units
Philosophy 152, Social Ethics	3
Religion 110, The Sacrament of Matrimony	1
Military Science 104, Advanced Course, Second Year Optional and by arrangement	(3)
History (any two upper division courses offered)	6
History 198, Research Techniques	1
Electives. Elect one of the following (two for those not taking Advanced Military Science). Economics 1B, Principles of Economics Sociology 2, Introduction Political Science 2, Introduction Philosophy 41B, History of Philosophy	3 (3)

Education (any course approved by the Head of the Department) AN UPPER DIVISION COURSE for which the prerequisite has been completed.	Education (any course approved by the Head of the Department) AN UPPER DIVISION COURSE for which the prerequisite has been completed.
17	17

A CURRICULUM FOR MATHEMATICS MAJORS

Freshman

Fall Semester	Units	Spring Semester	Units
English 1A, Composition and Literature	3	English 1B, Composition and Literature	3
Religion 5, The Sacraments	1	Religion 6, The Life of Christ	1
Psychology 1, Introductory Psychology	3	Philosophy 9, Logic	3
Military Science 1, Basic Course, First Year	1½	Military Science 2, Basic Course, First Year	1½
Public Speaking 1, Fundamentals of Expression	1	Public Speaking 2, Fundamentals of Expression	1
Mathematics 3A, Analytic Geometry and Calculus	3	Mathematics 3B, Analytic Geometry and Calculus	3
Elective	3	Physics 8, General Physics	4
	15½		16½

Sophomore

Fall Semester	Units	Spring Semester	Units
Philosophy 21, Philosophy of Nature	3	Philosophy 22, Philosophy of Man	3
Religion 7, The Existence and Essence of God	1	Religion 8, Creation	1
Military Science 3, Basic Course, Second Year	1½	Military Science 4, Basic Course, Second Year	1½
Physics 1A, General Physics	4	Physics 1B, General Physics	4
Mathematics 4A, Analytic Geometry and Calculus	3	Mathematics 8	3
History 2A, Western Civilization	3	Mathematics 4B, Analytic Geometry and Calculus	3
		History 2B, Western Civilization	3
	15½		18½

Junior

Fall Semester	Units	Spring Semester	Units
Philosophy 109, Theory of Knowledge	3	Philosophy 112, Metaphysics	3
Religion 107, God, the Redeemer and Redemption	1	Religion 108, Moral Guidance	1
Foreign Language	3	Foreign Language	3
Elective (pref. English 46A)	3	Elective (pref. English 46B)	3
Mathematics (two upper division courses offered for majors)	6	Mathematics (two upper division courses offered for majors)	6
Mathematics 199, Seminar	1	Mathematics 199, Seminar	1
	17		17

Senior

Fall Semester	Units	Spring Semester	Units
Philosophy 151, Basic Ethics	3	Philosophy 152, Social Ethics	3
Religion 109, Fundamental Apologetics	1	Religion 110, The Sacrament of Matrimony	1
History 171A, History of the United States	3	History 171B, History of the United States	3
Language or Elective	3	Language or Elective	3
Mathematics (two upper division courses offered for majors)	6	Mathematics (two upper division courses offered for majors)	6
Mathematics 199, Seminar	1	Mathematics 199, Seminar	1
	17		17

A CURRICULUM FOR PHILOSOPHY MAJORS

Freshman

See Curriculum for Economics Majors

Sophomore

Fall Semester	Units
*English 48, Advanced Composition and Literature—Prose	2
Philosophy 21, Philosophy of Nature	3
Religion 7, The Existence of God	1
Military Science 3, Basic Course, Second Year	1½
Language 3, 5, or further advanced, unless language requirement of 16 units (high school and college combined) has already been satisfied.	3
Philosophy 41A, History of Philosophy Lower division prerequisite for the major.	3
Lower division prerequisite for the minor. Philosophy majors must so arrange their course as to obtain a minor in some other subject. Choice of: History 2A, Western Civilization English 46A, Survey of English Literature Political Science 1, Introduction Economics 1A, Principles of Economics Sociology 1, Introduction (Because of the required course, History 171A-B a history minor will fit into this program easily)	3
Electives in Public Speaking or Music may be substituted for English 48 or 49	(2)
	16½

Spring Semester	Units
*English 49, Advanced Composition and Literature—Poetry	2
Philosophy 22, Philosophy of Man	3
Religion 8, Creation	1
Military Science 4, Basic Course, Second Year	1½
Language 4, 6, or further advanced, unless language requirement of 16 units (high school and college combined) has already been satisfied.	3
Phil. 41B History of Philosophy Lower division prerequisite for the major.	3
Lower division prerequisite for the minor. Philosophy majors must so arrange their course as to obtain a minor in some other subject. They should continue the subject chosen last semester: History 2B, Western Civilization English 46B, Survey of English Literature Political Science 2, Introduction Economics 1B, Principles of Economics Sociology 2, Introduction	3
Electives in Public Speaking or Music may be substituted for English 48 or 49	(2)
	16½

Junior

Fall Semester	Units
Philosophy 109, Theory of Knowledge	3
Philosophy (one or two Upper Division courses offered for majors)	4
Religion 107, The Redeemer and Redemption	1
History 171A, The United States	3
Military Science 101, Advanced Course, First Year Optional and by arrangement	(3)
Social Science or Literature Two of the following must be taken: History 2A, Western Civilization Political Science 1, Introduction Economics 1A, Principles of Economics Sociology 1, Introduction to Sociology English 46A, Survey of English Literature Or some upper division course	6

Spring Semester	Units
Philosophy 112, Metaphysics	3
Philosophy (one or two Upper Division courses offered for majors)	4
Religion 108, Moral Guidance	1
History 171B, The United States	3
Military Science 102, Advanced Course, First Year Optional and by arrangement	(3)
Social Science or Literature Two of the following must be taken: History 2B, Western Civilization Political Science 2, Introduction Economics 1B, Principles of Economics Sociology 2, Introduction of Sociology English 46B, Survey of English Literature Or some upper division course in pursuance of the minor the	6

*English majors must complete English 48 and 49. Others may elect either course.

in pursuance of the minor the student chose in sophomore year.		student chose in sophomore year. These courses should continue the program of the first semester without interruption.	
	17 or 20		17 or 20

Senior

Fall Semester	Units	Spring Semester	Units
Philosophy 151, Basic Ethics	3	Philosophy 152, Social Ethics	3
Philosophy (one or two Upper Division courses offered for majors)	4	Philosophy (one or two Upper Division courses offered for majors)	4
Philosophy 190, Research Techniques	1	Philosophy 190, Research Techniques	1
Religion 109, Fundamental Apologetics	1	Religion 110. The Sacrament of Matrimony	1
Military Science 103, Advanced Course, Second Year Optional and by arrangement	(3)	Military Science 104, Advanced Course, Second Year Optional and by arrangement	(3)
Social Science or Literature: Two of the following courses must be taken, whether the student is taking Advanced Military Science or not: History 2A, Western Civilization; Political Science 1, Introduction; Economics 1A, Principles of Economics; Sociology 1, Introduction to Sociology; English 46A, Survey of English Literature; Or some upper division course in pursuance of the minor the student chose in sophomore year.	6	Social Science or Literature: Two of the following courses must be taken, whether the student is taking Advanced Military Science or not: History 2B, Western Civilization; Political Science 2, Introduction; Economics 1B, Principles of Economics; Sociology 2, Introduction to Sociology; English 46B, Survey of English Literature; Or some upper division course in pursuance of the minor the student chose in sophomore year.	6
Elective. Students not taking Advanced Military Science may choose any course for which they have the prerequisites. It should be chosen from the list above, if any of them have not yet been chosen.	(3)	Elective. As above.	(3)
	18		18

A CURRICULUM FOR PHYSICS MAJORS

Freshman

Fall Semester	Units	Spring Semester	Units
English 1A, Composition and Literature	3	Chemistry 1B, Inorganic Chemistry	5
Religion 5, The Sacraments	1	Religion 6, The Life of Christ	1
Chemistry 1A, Inorganic Chemistry	5	Philosophy 9, Logic	3
Psychology 1, Introductory Psychology	3	Physics 8, General Physics	4
Mathematics 3A, Analytic Geometry and Calculus	3	Mathematics 3B, Analytic Geometry and Calculus	3
Military Science 1, Basic Course, First Year	1½	Military Science 2, Basic Course First Year	1½
Public Speaking 1, Fundamentals of Expression	1	Public Speaking 2, Fundamentals of Expression	1
	17½		18½

Sophomore

Fall Semester	Units	Spring Semester	Units
Philosophy 21, Philosophy of Nature	3	Philosophy 22, Philosophy of Man	3
Religion 7, Existence of God	1	Religion 8, Creation	1
Military Science 3, Basic Course, Second Year	1½	Military Science 4, Basic Course, Second Year	1½

Mathematics 4A, Analytic Geometry and Calculus	3	Mathematics 4B, Analytic Geometry and Calculus	3
Physics 9, General Physics	4	Physics 10, General Physics	4
Language, (German)	3	Language, (German)	3
		English 1B, Composition and Literature	3
	15½		18½

Junior

Fall Semester	Units	Spring Semester	Units
Philosophy 109, Theory of Knowledge	3	Philosophy 112, Metaphysics	3
Religion 107, God, the Redeemer and Redemption	1	Religion 108, Moral Guidance	1
Language (German)	3	Language (German)	3
Mathematics 119A, Differential Equations	3	Physics 101B, Electricity and Magnetism	3
Physics 101A, Electricity and Magnetism	3	Physics 110B, Analytical Mechanics	3
Physics 110A, Analytical Mechanics	3	Physics 136, Electronics	4
Physics 150A, Advanced Laboratory	1	Physics 150B, Advanced Laboratory	1
	17		18

Senior

Fall Semester	Units	Spring Semester	Units
Philosophy 151, Basic Ethics	3	Philosophy 152, Social Ethics	3
Religion 109, Fundamental Apologetics	1	Religion 110, Sacrament of Matrimony	1
History 171A, The United States	3	History 171B, The United States	3
Physics 120A, Atomic Physics	3	Physics 120B, Nuclear Physics	3
Physics 140, Heat and Thermodynamics	3	Physics 130B, Introductory to Mathematical Physics	3
Physics 130A, Introductory to Mathematical Physics	3	Physics 150D, Advanced Laboratory	1
Physics 150C, Advanced Laboratory	1	Physics 160, Methods of Research	1
		Elective	3
	17		18

A CURRICULUM FOR POLITICAL SCIENCE MAJORS

Freshman

See Curriculum for Economics Majors

Sophomore

Fall Semester	Units	Spring Semester	Units
*English 48, Advanced Composition and Literature—Prose	2	*English 49, Advanced Composition and Literature—Poetry	2
Philosophy 21, Philosophy of Nature	3	Philosophy 22, Philosophy of Man	3
Religion 7, The Existence and Essence of God	1	Religion 8, Creation	1
Military Science 3, Basic Course, Second Year	1½	Military Science 4, Basic Course, Second Year	1½
Language 3, 5, or further advanced, unless language requirement of 16 units (high school and college combined) has already been satisfied.	3	Language 4, or 6, or further advanced, unless language requirement of 16 units (high school and college combined) has already been satisfied.	3
Political Science 1, Introduction	3	Political Science 2, Introduction	3
History 2A, Western Civilization	3	History 2B, Western Civilization	3
Electives. One of the following may be substituted for English 48: Music 10A, History and Appreciation of Music; Speech 10, Acting I	(2)	Electives. One of the following may be substituted for English 49: Music 10B, History and Appreciation of Music; Speech 11, Acting II	(2)
	16½		16½

*English majors must complete English 48 and 49. Others may elect either course.

Junior

Fall Semester	Units	Spring Semester	Units
Philosophy 109, Theory of Knowledge	3	Philosophy 112, Metaphysics	3
Religion 107, The Redeemer and Redemption	1	Religion 108, Moral Guidance	1
Military Science 101, Advanced Course, First Year	(3)	Military Science 102, Advanced Course, First Year	(3)
Optional and by arrangement		Optional and by arrangement	
Political Science (any upper division course offered)	3	Political Science (any upper division course offered)	3
Political Science (any upper division course offered)	3	Political Science (any upper division course offered)	3
Economics 1A, Principles of Economics	3	Economics 1B, Principles of Economics	3
Elective.	3	Elective.	3
Sociology 1, Introduction		Sociology 2, Introduction	
English 46A, Survey of English Literature		English 46B, Survey of English Literature	
Music 10A, History and Appreciation of Music	(2)	Music 10B, History and Appreciation of Music	(2)
AN UPPER DIVISION COURSE for which the prerequisite has been completed.		AN UPPER DIVISION COURSE for which the prerequisite has been completed	
	16 or 19		16 or 19

Senior

Fall Semester	Units	Spring Semester	Units
Philosophy 151, Basic Ethics	3	Philosophy 152, Social Ethics	3
Religion 109, Fundamental Apologetics	1	Religion 110, The Sacrament of Matrimony	1
Military Science 103, Advanced Course, Second Year	(3)	Military Science 104, Advanced Course, Second Year	(3)
Optional and by arrangement		Optional and by arrangement	
Political Science 118A, History of Political Doctrines	3	Political Science 118B, History of Political Doctrines	3
Political Science (any upper division course offered)	3	Political Science (any upper division course offered)	3
Political Science 190, Research Techniques	1	Political Science 190, Research Techniques	1
History 171A, The United States	3	History 171B, The United States	3
Elective. (For those not taking Advanced Military Science)	(3)	Elective. (For those not taking Advanced Military Science)	(3)
Sociology 1, Introduction		Sociology 2, Introduction	
English 46A, Survey of English Literature		English 46B, Survey of English Literature	
Philosophy 41A, History of Philosophy		Philosophy 41B, History of Philosophy	
AN UPPER DIVISION COURSE for which the prerequisite has been completed.		AN UPPER DIVISION COURSE for which the prerequisite has been completed.	
	16		16

A CURRICULUM FOR SOCIOLOGY MAJORS

Freshman

See Curriculum for Economics Majors

Sophomore

Fall Semester	Units	Spring Semester	Units
Sociology 1 (Principles)	3	Sociology 2 (Principles)	3
*English 48 (Advanced Composition)	2	*English 49 (Advanced Composition)	2
Philosophy 21, Philosophy of Nature	3	Philosophy 22 (Philosophy of Man)	3
Religion 7 (Existence of God)	1	Religion 8 (Creation)	1
Military Science 3 (Basic Course)	1½	Military Science 4 (Basic Course)	1½
Language 3, 5, or further advanced, unless language requirement of	3	Language 4, or 6, or further advanced, unless language require-	3

*English majors must complete English 48 and 49. Others may elect either course.

16 units (high school and college combined) has already been satisfied.		ment of 16 units (high school and college combined) has already been satisfied.	
History 2A (Western Civilization)	3	History 2B (Western Civilization)	3
	16½		16½

Junior

Fall Semester	Units	Spring Semester	Units
Sociology 132, Social Stratification	3	Sociology 101, Principles of Statistical Method	4
Sociology 150, Social-Psychology	3	Sociology, Elect from the courses offered	3
Philosophy 109, Theory of Knowledge	3	Philosophy 112, Metaphysics	3
Religion 107, God the Redeemer	1	Religion 108, Moral Guidance	1
Economics 1A, Principles	3	Economics 1B, Principles	3
Elective	3	Elective	3
	16		17

Senior

Fall Semester	Units	Spring Semester	Units
Sociology 105, Methods	3	Sociology 125, Theory	3
Sociology, Elect from the courses offered	3	Sociology, Elect from the courses offered	3
Sociology 198, Thesis Research	1	History 171B, United States	3
History 171A, United States	3	Philosophy 152, Social Ethics	3
Philosophy 151, Basic Ethics	3	Religion 110, The Sacrament of Matrimony	1
Religion 109, Fundamental Apologetics	1	Elective	3
Elective	3		16
	17		

A CURRICULUM FOR SPANISH MAJORS

Freshman

See Curriculum for Economics Majors

Sophomore

Fall Semester	Units	Spring Semester	Units
*Englsh 48, Advanced Composition and Literature—Prose	2	*English 49, Advanced Composition and Literature—Poetry	2
Philosophy 21, Philosophy of Nature	3	Philosophy 22, Philosophy of Man	3
Religion 7, The Existence of God	1	Religion 8, Creation	1
Military Science 3, Basic Course, Second Year	1½	Military Science 4, Basic Course, Second Year	1½
Spanish 3, 5, or 101	3	Spanish 4, 6 or 102	3
History 2A, Western Civilization	3	History 2B, Western Civilization	3
Elective. (Lower division prerequisite for a minor in addition to Philosophy).	3	Elective. Continuation of subject last semester from above list.	3
Modern or Classical Language Political Science 1, Introduction Economics 1, Principles of Economics English 46A, Survey of English Literature Sociology 1, Introduction		Elective Continue courses begun in Fall semester.	
Electives. One of the following may be substituted for English 48:	(2)	Electives. One of the following may be substituted for English 49:	(2)
Music 10A, History and Appreciation of Music Speech 6A, Debating Speech 10, Acting I		Music 10B, History and Appreciation of Music Speech 11, Acting II	
	16½		16½

*English majors must complete English 48 and 49. Others may elect either course.

Junior

Fall Semester	Units	Spring Semester	Units
Philosophy 109, Theory of Knowledge	3	Phiolsophy 112, Metaphysics	3
Religion 107, The Redeemer and Redemption	1	Religion 108, Moral Guidance	1
Military Science 101, Advanced Course, First Year	(3)	Military Science 102, Advanced Course, First Year	(3)
Optional and by arrangement		Optional and by arrangement	
Spanish 103, Masterpieces of Spanish Literature	3	Spanish 104, Masterpieces of Modern Spanish Literature	3
Spanish 105, Advanced Composition and Conversation, or 101, Survey of Spanish Literature	3	Spanish 106, Commercial Spanish, or 102, Survey of Spanish Literature	3
History 171A, The United States	3	History 171B, The United States	3
Elective.	3	Elective.	3
Modern or Classical Language		Modern or Classical Language	
Political Science 1, Introduction		Political Science 2, Introduction	
English 46A, Survey of English Literature		English 46B, Survey of English Literature	
Economics 1A, Principles of Economics		Economics 1B, Principles of Economics	
Sociology 1, Introduction		Sociology 2, Introduction	
Education (any course approved by the Head of the Department)		Education (any course approved by the Head of the Department)	
AN UPPER DIVISION COURSE for which the prerequisite has been completed.		AN UPPER DIVISION COURSE for which the prerequisite has been completed.	
	16 or 19		16 or 19

Senior

Fall Semester	Units	Spring Semester	Units
Philosophy 151, Basic Ethics	3	Philosophy 152, Social Ethics	3
Religion 109, Fundamental Apologetics	1	Religion 110, The Sacrament of Matrimony	1
Military Science 103, Advanced Course, Second Year	(3)	Military Science 104, Advanced Course, Second Year	(3)
Optional and by arrangement		Optional and by arrangement	
Spanish 107, Cervantes	3	Spanish 108, Contemporary Spanish Drama	3
Spanish 101, Survey of Spanish Literature, or 105, Advanced Composition and Conversation	3	Spanish 102, Survey of Spanish Literature, or 106, Commercial Spanish	3
History 161A, History of the Americas	3	History 161B, History of the Americas	3
Elective. (For those not taking Advanced Military Science)	(3)	Elective. (For those not taking Advanced Military Science)	(3)
Modern or Classical Language		Modern or Classical Language	
Political Science 1, Introduction		Political Science 2, Introduction	
English 46A, Survey of English Literature		English 46B, Survey of English Literature	
Economics 1A, Principles of Economics		Economics 1B, Principles of Economics	
Sociology 1, Introduction		Sociology 2, Introduction	
Education (any course approved by the Head of the Department)		Education (any course approved by the Head of the Department)	
AN UPPER DIVISION COURSE for which the prerequisite has been completed.		AN UPPER DIVISION COURSE for which the prerequisite has been completed .	
	16		16

LOS GATOS CAMPUS

Sacred Heart Novitiate located above Los Gatos is a branch campus of the University of Santa Clara. Work on this campus is devoted exclusively to preparation for the priesthood of members of the Society of Jesus. Studies pursued here are the first of twelve years of study. The curriculum at Los Gatos comprises humanistic and classical studies.

Aims

The Priesthood demands men well formed in asceticism, deeply trained in scientific, philosophical, and theological studies, and in genuine culture. To attain these ends the Los Gatos campus follows a four year program. The first two years, technically known as the Novitiate, are taken up mainly with religious formation. However, during this period the Novices take regular college courses in Latin, Greek, and Public Speaking.

The last two years at Los Gatos are called the Juniorate. Here the scholastics devote themselves to studies in the Liberal Arts. The curriculum prescribes Latin, English, Greek, History, French, Public Speaking, Education, and Mathematics.

Entrance Requirements

Minimum requirements demand four years with grades above average of academic high school work including four years of Latin.

College of Business Administration

Kenna Hall

COLLEGE OF BUSINESS ADMINISTRATION

COLLEGE OF BUSINESS ADMINISTRATION—ADVISORY BOARD

L. Hunt
E. D. Maloney
P. G. Pasetta
S. L. Schwartz
G. J. Ticoulat

GENERAL STATEMENT

The College of Business Administration correlates the general educational objectives of the University with preparation in meeting the general and specific problems of industry.

DEGREE CURRICULA

The program leading to a degree of Bachelor of Science in Commerce, consists of a total of 128 semester credit hours.

During the first two years of the course, extreme specialization is not the aim of the College. Rather, the student is trained in the fundamentals of English, Mathematics, Economics, Accounting, Public Speaking, and Philosophy so that he will be well prepared to analyze and study the technical and special problems of business.

During the Junior and Senior years, the course is arranged so that every student will include courses in the major functions found in typical business firms. All students must take courses in Finance, Marketing, Production, Administrative Practices, Accounting, Business Policy, Business Law, and Ethics.

Special and advanced work is given in Economics, Sales, Industrial Management, Finance, Accounting, Advertising, Labor Relations, Statistics, Transportation, Retailing and Personnel Management so that students may specialize in some specific area. As an example, majors in Accounting may take the required work to prepare for the Certified Public Accounting Examination.

The courses in ethics, philosophy and science provide the student with the broader fundamental principles necessary for dealing with the industrial system in its social relationships.

HISTORY

The Board of Trustees established the College of Business Administration as an integral part of the University of Santa Clara in 1926. The four year curriculum was approved in 1927.

OBJECTIVE

The primary objective of the College of Business Administration is to supply professional training for those who are aiming at responsible positions in corporations, in their own business, in professional organizations serving business, or in state and federal government agencies.

METHOD OF INSTRUCTION

The method of instruction used in the College is one in which the student learns to do through doing. Cases, problems, and discussions supplement in large measure the lecture method which many other schools use.

The students must serve as active participants in class discussions. They must learn how to analyze business conditions and problems in a great variety of business situations. In so doing, they develop the ability and aptitude to evaluate a business problem and to decide on what course of action to follow.

ENTRANCE REQUIREMENTS

To qualify for Freshman standing in the College of Business Administration, applicants must be graduates of an accredited high school and must present no less than sixteen units including the following:

English	3 units
Foreign Language (One Language)	2 units
Mathematics (Algebra and Geometry)	2 units
History	1 unit
Laboratory Science	1 unit
Optional, advanced course in Foreign Language, Mathematics, or Laboratory Science	1 unit

The remaining six units should be in solid college preparatory subjects rather than in the terminal and industrial courses. Additional courses in Foreign Language, Mathematics, Science, English and Social Studies are recommended.

The quality of the grades presented for entrance to the College of Business Administration must be above average. In view of the fact that a C average is required to remain in the College or to receive a degree, it is obvious that something better than a C average should be presented for entrance.

ORGANIZATION OF THE COLLEGE

The curriculum of the College of Business Administration extends over four years and leads to the degree of Bachelor of Science in Commerce.

The work in this college is divided into that of Lower Division and Upper Division.

THE COMBINED BUSINESS AND LAW DEGREES

The combined degree, by which a student is allowed to substitute for his senior year in college the professional courses of the first year of Law School, is awarded only to students, a) who have done all their undergraduate college work at Santa Clara; b) who have maintained not less than a B average in the Junior year in college; c) who complete with not less than a C average all the professional courses required in the first year of the Santa Clara College of Law and a course in Ethics approved by the Department of Philosophy; and d) who present not less than 128 units of work. Such students will be awarded the Bachelor's degree from the College of Business Administration after completing the first year of law.

The College of Business Administration does not award the combined degree to students who complete part of their undergraduate studies elsewhere, or who undertake their professional studies in Colleges not under the administration of the University.

TRANSFER STUDENTS

Students who transfer to the College of Business Administration from other universities and Junior colleges must complete during their first two years a minimum of 60 semester units in order to be given Junior status. Included in these 60 units must be 6 units of Principles of Accounting, 6 units of Principles of Economics and a course in Statistics.

LOWER DIVISION

The first two years (freshman and sophomore) of college work are known as the lower division. The work of the lower division supplements that of the secondary schools in establishing a basis for a liberal education, and at the same time includes work introductory to the professional courses required at the University.

Certain courses taken in the high school are better adapted to prepare the student to undertake these lower division requirements. It is desirable that the student should so arrange his high school program as to complete required work in the field of foreign language, and that he should do sufficient work in mathematics and the natural sciences to enable him to undertake with success the courses required in College. In no case, however, does the satisfaction of lower division requirements in the high school reduce the amount of work required in the lower division or for the degree. The lower division work presupposes the prescribed entrance requirements, the successful completion of Subject "A" and the specified requirements in the respective courses.

Required Lower Division Courses

It should be noted that the recommended program for the first two years is the same for all students. Students must complete the course in Econ 1A and 1B with a minimum grade of a "C" average.

Freshman Year

8 units of a Laboratory Science (Physics, Chemistry or Biology)
6 units of English
3 units of Military Science
3 units of Introductory Psychology
3 units of Logic
2 units of Political Science
6 units of Principles of Accounting
2 units of Religion*

Sophomore Year

6 units of Principles of Economics
3 units of Mathematics
4 units of Statistics
3 units of English
3 units of Military Science
3 units of Philosophy of Man
3 units of Philosophy of Nature
3 units of Accounting or Management
2 units of Public Speaking
2 units of Religion*

SUGGESTED CURRICULA

Freshman Year

Fall Semester	Units	Spring Semester	Units
Engl. 1A (Engl. Comp. & Lit.)	3	Engl. 1B (Engl. Comp. & Lit.)	3
Psych. 1 (Intro. Psychology)	3	Phil. 9 (Logic)	3
Science (Chemistry, Physics or Biology)	4	Science (Chemistry, Physics or Biology)	4
B.A. 1A (Accounting)	3	B.A. 1B (Accounting)	3
Mil. Sci. 1 (Basic Course)	1½	Mil. Sci. 2 (Basic Course)	1½
Relig. 5 (The Sacraments)	1	Relig. 6 (The Life of Christ)	1
Pol. Science 20A (American Inst.)	1	Pol. Science 20B (American Inst.)	1
	16½		16½

Sophomore Year

Fall Semester	Units	Spring Semester	Units
Phil. 21, Phil. of Nature	3	Phil. 22 (Phil. of Man)	3
Engl. 51 (Adv. Composition)	3	Engl. 51 (Adv. Composition)	3
or		or	
B.A. 40 (Statistics)	4	B.A. 40 (Statistics)	4
B.A. 16 (Math. of Finance)	3	B.A. 21 (Introductory Cost Acctg.)	3
Econ. 1A (Prin. of Econ.)	3	Econ. 1B (Prin. of Econ.)	3
Speech 1	1	Speech 2	1
Mil. Sci. 3 (Basic Course)	1½	Mil. Sci. 4 (Basic Course)	1½
Relig. 7 (The Existence and Essence of God)	1	Relig. 8 (Creation)	1
	15½ or 16½		15½ or 16½

*Only Catholic Students are required to take courses in Religion.

UPPER DIVISION

Objectives

The primary objective of the upper division is to provide fundamental academic and professional training which will qualify graduates for the responsibilities of business. In other words, the College of Business Administration has as its primary goal the training of professional business men.

The secondary objective is to offer sufficient work in Accounting, Industrial Management, Sales and Marketing, Finance and Economics so that students who desire to specialize may secure a sound foundation in these areas.

Requirements

Each student is required on entering the upper division to fulfill the following minimum requirements for graduation:

1. At least 60 units of upper division subjects must be completed after fulfilling the requirements of the lower division. Where lower division units are taken for upper division credit, both the quantity and quality of such work must conform to upper division standards.
2. Residence of at least one year immediately preceding graduation is required for the granting of any degree.
3. Electives. Courses not taken as prescribed courses and not included in the students' major and minor sequences may be chosen as free electives to complete the 128 units required for graduation.
4. A minimum of 48 units in Business Administration and Economics must be completed during the Junior and Senior years by all students with the exception of those taking Advanced Military Science. Students in Advanced Military Science will be required to complete a minimum of 45 units in Business Administration and Economics.

Substitution for some of the total prescribed units may be allowed in special programs with permission of the Dean.

REQUIRED UPPER DIVISION COURSES

The course is arranged so that every student must include during his Junior and Senior years courses in the major functions found in typical business firms.

Objectives

Required upper division courses

I. Basic courses:

During the Junior and Senior years the students will be required to take the following basic courses—

3 units of Finance
3 units of Marketing
3 units of Business Organization and Management
3 units of Economics of Enterprise
3 units of Business Policy
6 units of Business Law
12 units of Philosophy
(Catholic students will be required to take a one unit course in Religion each semester).

II. Field of Emphasis:

Nine units beyond the introductory course in one field—

The following fields of emphasis are approved:
Accounting, banking and finance, industrial management and marketing (including retailing, sales management and advertising).

Students who do not wish to elect one of the above fields of emphasis may receive permission to:

1. Fulfill the economic major of the Department of Economics.
2. Elect special programs with the permission of the Dean (such programs may be in other divisions and departments such as industrial Engineering and Social Science).

The above required courses give the students the training necessary in preparing them to have a broad business outlook. With courses in Marketing, Industrial Management, Corporation Finance, Economics, and Accounting in their required program, the students are prepared to grasp and cope with the complicated problems of management. They are not limited in their analyses of these varied problems to any one phase of the operations of a company, but are equipped to consider all aspects.

GRADUATION

Graduation from this college requires the completion of 128 semester units of college work, of which 64 units constitute the amount required in the lower division and at least 60 of which are required in the upper division. To qualify for a degree a student must maintain at least a "C" average in the total required courses in Business, Law and Economics.

Business Lectures

Throughout the year a series of lectures is given by business and public men of prominence on various problems of interest to the student body. These lectures bring the students into personal contact with representative business men and also enable them to become familiar with practical business problems.

Inspection Trips

The close connection of the University with the business and industrial establishments of the San Francisco metropolitan district enables the faculty to arrange various inspection trips to such industries as may be of interest. In this way students are given a practical insight into the business organization and workings of representative industries.

Suggested Program

Junior Year*

Fall Semester	Units	Spring Semester	Units
B.A. 181 (Marketing)	3	B.A. 160 (Bus. Org. & Mgmt.)	3
B.A. 121 or 123 (Finance)	3	Phil. 112 (Metaphysics)	3
Phil. 109 (Theory of Knowledge)	3	Relig. 108 (Moral Guidance)	1
Relig. 107 (God, The Redeemer)	1	B.A. or Econ. Electives	9
B.A. or Econ. Electives	6		
	16		16

Senior Year*

Fall Semester	Units	Spring Semester	Units
B.A. 159 (Econ. of Enterprise)	3	B.A. 162A (Business Policy)	3
Phil. 151 (Basic Ethics)	3	B.A. 155B (Business Law)	3
Relig. 109 (Fundamental Apologetics)	1	Phil. 152 (Social Ethics)	3
B.A. 155A (Business Law)	3	Relig. 110 (The Sacrament of Matrimony)	1
B.A. or Econ. Electives	6	B.A. or Econ. Electives	6
	16		16

*During the Junior and Senior years, all students must complete 9 units beyond the introductory courses in one field of emphasis. The following fields of emphasis are approved:

Accounting, banking and finance, industrial management, marketing, (including retailing, sales management and advertising) and economics. Special programs, with the permission of the Dean, may be selected from other areas of the University.

UPPER DIVISION

Curricula in Areas of Emphasis

Every student must take a minimum of nine units beyond the introductory course in one field of emphasis. The following fields of emphasis are approved: accounting, finance, economics, marketing, and production management. Students who do not wish to elect one of the above fields may receive, in special cases, permission of the Dean to elect programs in other divisions such as mathematics, engineering, psychology, political science, and public administration.

The courses acceptable for specialization in accounting, finance, economics, marketing, production management, and law are listed below.

Curriculum in Accounting (Acceptable courses)		Units
Bus. Admin. 130	Accounting Valuation	3
Bus. Admin. 131	Accounting: Proprietorship	3
Bus. Admin. 133	Cost Accounting	3
Bus. Admin. 134	Accounting Systems	3

Bus. Admin. 135	Analysis of Financial Statements	3
Bus. Admin. 136	Industrial Cost Analysis & Research	3
Bus. Admin. 132A	Accounting Problems	3
Bus. Admin. 132B	Accounting Problems	3
Bus. Admin. 137	Auditing	3
Bus. Admin. 138	Income Taxation	3

Curriculum in Finance

(Acceptable courses)

Bus. Admin. 121	Corporation Finance	3
Bus. Admin. 123	Business Finance	3
Bus. Admin. 124	Investments & Investment Institutions	3
Bus. Admin. 125	Problems in Finance	3
Bus. Admin. 127	Problems in Public Finance	3
Bus. Admin. 128	Business Forecasting	3
Bus. Admin. 130	Accounting Valuation	3
Bus. Admin. 135	Analysis of Financial Statements	3
Econ. 120	Public Finance & Taxation	3
Econ. 122	Money & Banking	3
Bus. Admin. 148	Principles of Insurance	3

Curriculum in Economics **Units**

(Acceptable courses)

Econ 110	History of Economic Doctrines	3
Econ. 114	Economic Theory	3
Econ. 115	Aggregate Economics	3
Econ. 120	Public Finance & Taxation	3
Econ. 122	Money and Banking	3
Econ. 126	Business Cycles	3
Econ. 150	Labor Problems	3
Econ. 158	Government and Business	3
Econ. 180	International Trade	3
Econ. 116	American Economic History	3

Curriculum in Marketing

(Acceptable courses)

Bus. Admin. 141	Principles of Insurance	3
Bus. Admin. 165	Retailing	3
Bus. Admin. 167	Purchasing	3
Bus. Admin. 181	Marketing Principles	3
Bus. Admin. 182	Marketing Problems	3
Bus. Admin. 183	Principles of Transportation	3
Bus. Admin. 184	Advertising	3
Bus. Admin. 185	Sales Management	3
Bus. Admin. 186	Salesmanship	3
Bus. Admin. 199A	Business Research	3
Bus. Admin. 199B	Business Research	3
Econ. 180	International Trade	3

Curriculum in Production Management

(Acceptable courses)

Bus. Admin. 133	Cost Accounting	3
Bus. Admin. 136	Industrial Cost Analysis & Research	3
Bus. Admin. 163	Production Control	3
Bus. Admin. 164	Time Study & Motion Analysis	3
Bus. Admin. 168	Administrative Practices	3

Bus. Admin. 166	Personnel Management	3
Bus. Admin. 160	Business Organization & Management	3
Econ. 150	Labor Problems	3
ME 161	Management Controls	3
ME 162	Methods Engineering	3
ME 163	Work Measurement & Wage Payment	3
ME 164	Management Engineering II	3

Combined Curriculum in Business and Law

Junior Year

			Semester I	Semester II
Bus. Admin. 181-160	Marketing	Bus. Management	3	3
Bus. Admin. 121-162A	Finance	Bus. Policies	3	3
Bus. Admin. 59	Econ. of Enterprise	B.A. Elective	3	3
Bus. Admin. or Econ. Electives			3	3
Phil. 109-110	Theory of Knowledge		3	3

Senior Year

School of Law Electives plus six units of Ethics

EVENING DIVISION

The College of Business Administration's Evening Division offers courses in the fields of Accountancy, Business Law, Sales, Industrial Management, Finance, Economics, and Ethics.

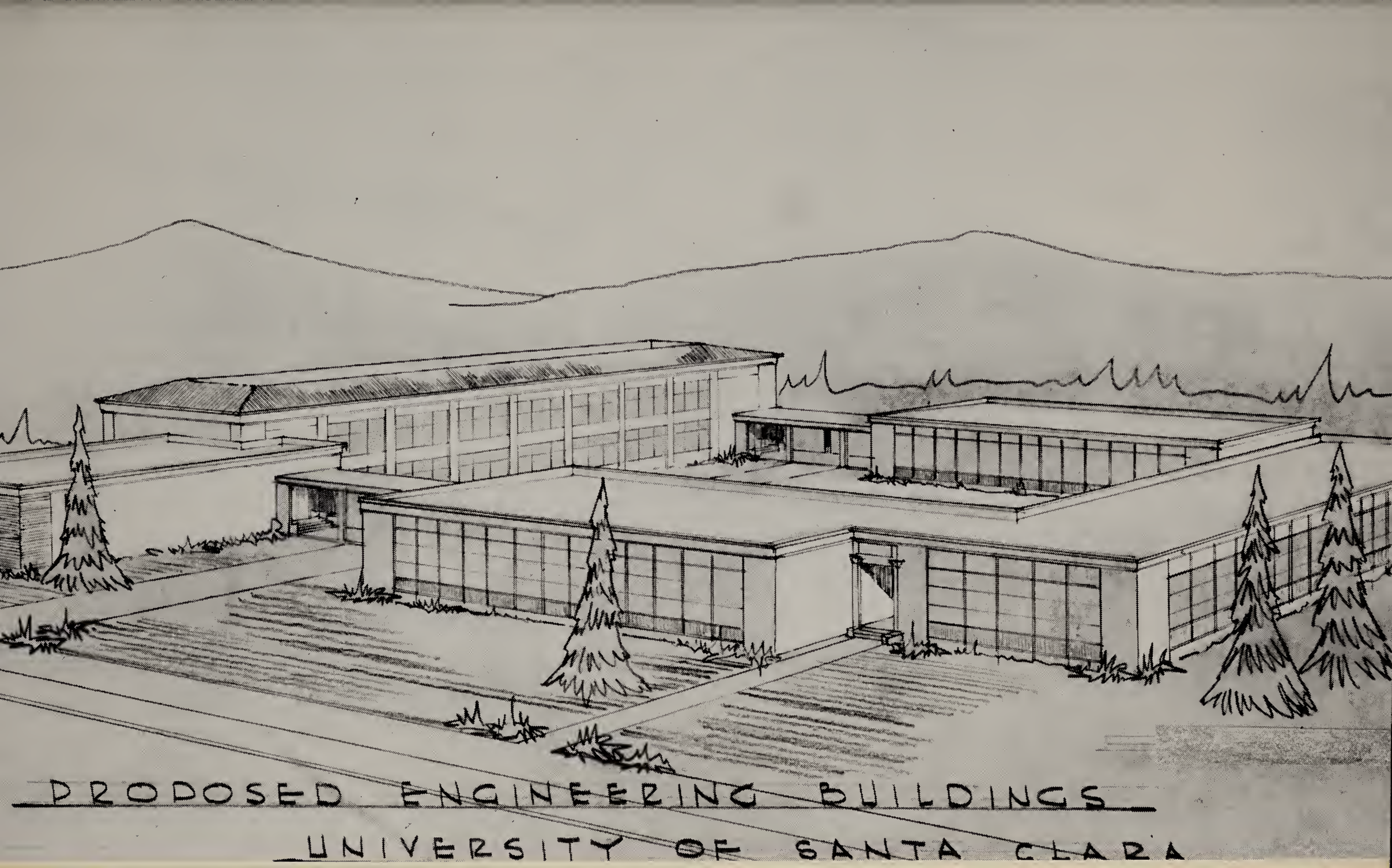
Subsequent demand for specialized work will be the criterion for continuation and elaboration of the program.

High School graduates presenting the necessary units of admission to the University of Santa Clara will be admitted to the classes and students who do not meet the entrance requirements will be admitted on special examination or on their record of experience.

While college credit is granted for the majority of the classes offered, any student, to qualify for a degree, must complete all the entrance, residence and academic requirements as set down for the Day Division.

College of Engineering

Proposed Engineering Quad



PROPOSED ENGINEERING BUILDINGS

UNIVERSITY OF SANTA CLARA

COLLEGE OF ENGINEERING

ADVISORY BOARD

Donald I. Cone
Warren H. McBryde
Glenn B. Woodruff

The College of Engineering offers undergraduate programs leading to the degrees of Bachelor of Civil Engineering, Bachelor of Electrical Engineering, and Bachelor of Mechanical Engineering. The programs primarily include that course work which is considered fundamental to all engineering with a minimum of specialization in the separate branches of engineering. The program has been developed to provide a basis for general engineering practice, for advance study and research, or for industrial administrative work. The technical work of these departments is guided by experienced engineers. As in all other departments of the University the students are under the guidance of the Jesuit Fathers.

FIELDS OF ENGINEERING

Upon completion of an undergraduate program in engineering, a wide range of opportunities exists in the profession of engineering. This vista is becoming increasingly broad because of the rapid expansion of technology in today's society, and the influence of technology on many of the activities in business and industry. In addition, engineering has proven to be an excellent background for assignments which in themselves are not necessarily classified as professional engineering. As a result, there are many fields in which an engineering graduate's professional development may take place regardless of his branch of specialization as an undergraduate.

In general engineering practice in business, industry, and all levels of government there is an unlimited variety of activities appealing to the varied interest of the individual; design, industrial research, development, technical administration, construction, sales and production, to list a few.

Although students are asked to indicate a tentative choice of major field in their application for admission to the College of Engineering, this choice does not seriously affect their programs of study until after the second year of engineering. There is a great similarity between the various degree programs even in the third year, and it is often possible to change the major course of study with minimum requirements to be made up. During the first two years of engineering, a student is expected to further investigate the fields of engineering so that his choice of a major is made on increased evidence he may accumulate in his reading, his visits to plants and engineering projects, his talks with people who have had experience in the various fields and in general, a greater knowledge of the variety of opportunities open to engineers.

Civil Engineering relates to works in connection with transportation, such as highways and traffic, railways and canals; to structural works, such as bridges, buildings, dams, piers and many other structures constructed in wood, steel or reinforced concrete; to sanitary works and works which have to do with water, such as the collection, purification and distribution of water for a municipal supply; the collection, treatment and disposal of sewage; the drainage of some lands and the irrigation of others. In all of these fields of work, technical knowledge is required for the

execution of successful designs, and for proper operation and maintenance.

Electrical Engineering is a profession whose members engage in a wide variety of activities. They work in the design, construction and operation of equipment for generation, transmission, and utilization of electrical energy. They are concerned with all phases of the electrical transmission of information such as radio, television and telephone. Data processing equipment and computers used by business, industry and government are included in their major area of interest. Much of the equipment used in maintaining our national security is powered and controlled by electric and electronic mechanisms. The uses for electrical systems seem unlimited and the scope of the electrical engineers' activities increases as rapidly as new applications are found.

Mechanical Engineering attracts those engineers who are interested in: propulsion ranging from hydraulic jets and propellers to rockets; power generation ranging from solar heat engines to nuclear power plants; explosions of all types extending from the housed explosion in the internal combustion engine to free bomb-type explosion; heating, refrigeration and air conditioning ranging in application from human comfort to the cooling of vacuum tubes; structures subjected to motion extending from printing presses and computers to guided missiles.

Mechanical engineers are concerned not only with the design of this variety of machines, products and equipment, but also with the design and operation of the factories, mills, and plants in which manufacturing and processing takes place.

The materials and systems used by the mechanical engineer, commonly have serious personnel and public safety hazards from explosion, material failure, fire and contamination. It is a mechanical engineer's challenge to recognize these hazards and so deal with them that his total contribution to society will be constructive.

The Civil, Electrical and Mechanical Engineering degree programs at Santa Clara are accredited by the Engineering Council for Professional Development. This Council reflects the nationwide concensus of the type and quality of programs that will be of most benefit to the individual and the organizations with which he will be engaged.

With the increased complexity of our technology, and the increased emphasis on research and development activities, it is evident that a four year formal preparation is inadequate for many of these assignments. For the same reason, those students who will join the engineering profession as teachers will wish advance study in engineering. The undergraduate programs at Santa Clara have proven to be a solid background for the graduates who have enrolled in graduate study at universities throughout the country. Students who have indicated their ability and interest by achieving above average undergraduate records are strongly encouraged to continue their formal education.

PROFESSIONAL ACTIVITIES

A man's professional growth may be divided into three phases: his formal education, the period as an engineer-in-training, and his career as a professional engineer. To create the environment which will encourage participation in professional activities, the College of Engineering sponsors the following activities:

The Engineering Society — The society's membership includes all students enrolled in the College of Engineering. Elected student officers organize and direct the group's activities which include: weekly meetings, to which prominent engineers are invited to speak on current engineering problems; the annual Engineers' Ball, Open House, publications and similar college activities.

In addition, student branches of the national professional societies meet frequently. Membership is open to all students enrolled in the department which the group represents. Membership in the student branches is readily transfered to the senior chapters of the societies upon graduation. These societies include:

AMERICAN SOCIETY OF CIVIL ENGINEERS
AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
and the INSTITUTE OF RADIO ENGINEERS (Joint Branch)
AMERICAN SOCIETY OF MECHANICAL ENGINEERS

TAU BETA PI

To give increased recognition to outstanding scholastic achievement, the California Zeta Chapter of the Tau Beta Pi Association was installed at Santa Clara in 1956. Tau Beta Pi is a National Engineering Honor Society whose members are selected for outstanding scholastic accomplishment.

HONOR STANDING

Honor standing is granted by the Dean of Engineering each semester to those students who maintain a high scholastic achievement. Students with Honor Standing are normally allowed greater freedom in course selection and the amount of work they can undertake in a semester.

Graduation Honors are awarded by the University based on the work of the four years.

ADMISSION TO THE COLLEGE OF ENGINEERING

Freshman

To qualify for Freshman standing in the College of Engineering, applicants must be graduates of an accredited high school and must present no less than sixteen units including the following:

English	3	Trigonometry	½
Foreign Language (one language)	2	History	1
Algebra	2	Chemistry	1
Geometry	1	Physics	1
		Unprescribed	4½

It is strongly recommended that the unprescribed units be in Mathematics, Languages, Natural or Social Sciences. Applicants who offer a list of subjects not in accordance with the above will be admitted at the discretion of the Admissions Committee, based on their College Entrance Examination achievement and their high school record.

ENTRANCE EXAMINATIONS:

All applicants for admission to the freshman class in engineering are required to take the following examinations:

The scholastic aptitude test (morning program)

Achievement test in advanced mathematics, and any two of the following: English, Physics, Chemistry (afternoon program).

The entrance examinations are given by the College Entrance Examination Board and are offered at many locations throughout the world. Students living in the West should write to College Examination Board, 4640 Hollywood Blvd., Los Angeles 27, requesting the application form and information on examination dates and locations. Students living in the East should write College Examination Board, P. O. Box 592, Princeton, New Jersey.

Candidates may chose any date they wish, or divide the tests among two or more dates in the same or in different years. A candidate should plan to have completed the required series of tests not later than the March test date of his senior year. The Board should be requested to send scores directly to the University of Santa Clara.

WHEN TO APPLY:

It is recommended that a test application form and test information be obtained from the College Entrance Examination Board not later than October of the senior year in high school. The procedure for making application for admission to the University may be found on page 44. It is suggested that the application for admission to the University be submitted by April 1.

MATHEMATICAL ACHIEVEMENT

Only those students who are prepared to undertake the second course in Calculus and Analytical Geometry will be permitted to register in the first course in Physics which is offered concurrently. Applicants who would normally be admitted except for their mathematical achievement will be notified of this condition. Remedial mathematics courses in effect add an additional year to the degree program. This additional year can be eliminated by enrolling in a summer program in mathematics before entering the freshman year. A summer program of this type will be offered at Santa Clara beginning in June 1959.

ADMISSION WITH ADVANCED STANDING:

A student transferring to Santa Clara to complete his engineering program must:

1. Undertake all courses listed for the degree for which he cannot present a substantial equivalent from his previous work. Only courses passed with a "C", or better at accredited schools, will be accepted. Courses in religion are required of Catholic students during each semester of enrollment but need not be made up by transfer students.
2. All transfer applicants for the College of Engineering must submit results of the College Entrance Examination Board Scholastic aptitude test. Those students who have less than three semesters of college level work completed at the time of application must also submit results of the College Entrance Examination Board achievement tests in advanced Mathematics, English and Physics, and their high school record.

3. Transfer applicants will not be considered who have earned less than 2.5/4.0 average on previous college work. Comprehensive examinations may be required for admission to the upper division work at the discretion of the Committee on Admissions.
4. Transfer students who are eligible for upper division courses may substitute E.E. 135 for E.E. 125 and E.E. 126.

THE ENGINEERING CURRICULUM

The three programs in Civil, Electrical and Mechanical Engineering are planned around a common core of courses which will provide:

1. A thorough preparation in the basic sciences of physics, chemistry and mathematics.
2. The general application of these sciences as developed in the engineering fundamentals: Mechanics of solids and fluids, properties of materials, thermodynamics, electricity and magnetism.
3. Assistance in further developing the ability to communicate orally, or by written and pictorial presentations.
4. Additional study in the humanities, including the social sciences, religion and philosophy.

The professional subjects pertaining to the particular areas of Civil, Electrical and Mechanical Engineering are developed primarily in the upper division. With these courses and the Senior Thesis an opportunity exists to integrate the basic and fundamental knowledge as applied to the area of specialization.

REQUIRED COURSES FOR ALL STUDENTS IN ENGINEERING

Course No.	Subject	Units
Math. 3A, 3B, 4A, 4B, 119	Analytical Geometry and Calculus, Differential Equations	15
Physics 8, 9, 10	General Physics	12
Chemistry 3A, 3B	General Chemistry	8
M.E. 1, 2	Engineering Drawing	4
C.E. 15	Mechanics-Statics	3
C.E. 16	Mechanics-Dynamics	3
C.E. 116, 166	Mechanics of Materials	4
M.E. 121, 131	Thermo-fluid Mechanics	4
E.E. 136	Introductory Electronics	4
C.E., E.E., or M.E. 170A, 170B	Senior Thesis	2
C.E., E.E., or M.E. 198	Senior Seminar	1
Religion 5, 6, 7, 8, 107, 108, 109, 110	Religion (See Note 1)	4
Philosophy 61, 62, 63, 64	Philosophy	6
English 1A, 1B	Composition and Literature	6
	Liberal Electives	12
Speech 1	Public Speaking	1
Military Science 1, 2, 3, 4	Basic Course R.O.T.C. (See Note 2)	6

Note 1—Not required for non-Catholic students. Equivalent semester units must be substituted.

Note 2—Required of all students unless exempted for reasons of health or previous service.

ADDITIONAL COURSES REQUIRED BY THE MAJOR DEPARTMENTS

Civil Engineering

Course No.	Subject	Units
M.E. 123, 133	Thermo-fluid Mechanics	4
E.E. 135	Electrical Circuits and Machines	4
C.E. 71A	Graphic Statics	1
C.E. 78	Geology for Engineers	3
C.E. 110	Hydraulics	3
C.E. 6A, 57	Surveying	5
C.E. 8	Summer School of Surveying	4
C.E. 122B, 123A, 124A, 172, 173B, 174D	Structures	15
C.E. 126A, 176	Soil Mechanics	4
C.E. 142A	Highways	3
C.E. 131A	Sanitary Engineering	2

Electrical Engineering

	Liberal Electives	3
M.E. 11	Manufacturing Processes	1
M.E. 122, 133	Thermo-fluid Mechanics	6
M.E. 141	Heat Transfer	3
*E.E. 125, 126	Electrical Circuits, Machines	8
E.E. 138	Intermediate Circuits	3
E.E. 139	Intermediate Electronics	4
E.E. 127	Intermediate Electric Machines	4
	Technical Electives	13

Mechanical Engineering

M.E. 11	Manufacturing Processes	1
M.E. 15	Instrumentation (or C.E. 6A, Surveying)	2
M.E. 122, 133	Thermo-fluid Mechanics	6
*E.E. 125, 126	Electrical Circuits, Machines	8
M.E. 141	Heat Transfer	3
M.E. 118, 119	Machine Design	6
M.E. 134	Mechanical Engineering Lab.	1
M.E. 160	Management Engineering	3
	Technical Electives	15

*Transfer students may substitute E.E. 135

LIBERAL ELECTIVES

Liberal Electives. The Electrical Engineering program requires a minimum of 12 units, and the Civil and Mechanical programs a minimum of 9 units of liberal elective credit in addition to English 1A and 1B, and Speech 1. A course in each of the following three areas must be completed:

English and Speech

Political Science and History

Economics

ACADEMIC INFORMATION

STUDENT CLASSIFICATION — Class rank in engineering is based upon the number of units earned which are applicable to the engineering degree program. Freshman 0-33 Sophomore 34-66 Junior 67--101 Senior 102 and over

SEMESTER SCHEDULES — The normal semester schedule is 18 units. No student may carry in excess of 19 units in a semester unless he has Honor Standing and the written permission of the Dean.

ACADEMIC STANDARDS — Complete academic standards for the University are shown on page 47.
In summary they are:

1. A freshman who fails to earn a 1.7 average in his first semester or a 2.0 average for the year is placed on probation.
2. Other students who fail to earn a "C" average in any semester, or whose cumulative average is below 2.0, are placed on academic probation.
3. During the following semester a student must earn a "C" average to be removed from probation.
4. A student who does not remove his probation is subject to disqualification.
5. A "C" average in all engineering courses must be earned in order to be recommended for a degree.

NORMAL TIME REQUIREMENTS — The average student will be able to complete a degree program in eight semesters. Those students who are deficient in mathematics, or who must assume part-time off campus jobs, or who add additional programs to their engineering program will require nine or ten semesters.

FRESHMAN ORIENTATION — In addition to the orientation lectures for all Freshman Students during the three days following Freshman registration in the Fall, the College of Engineering will present a series of orientation lectures during the first semester for Freshmen enrolled in Engineering. The series will include discussions of the Engineering Profession, information about the various fields of engineering, suggestions on methods of increasing the learning experience, and expansion of the goals of the engineering program.

R.O.T.C. — Unless excused for reasons of health or prior military service, all freshman and sophomore students are required to enroll in the Basic Course of the Reserve Officers Training Corps. Students following an engineering program of study who are also enrolled in the junior and senior year Advanced Course will usually require more than the normal four years in the University to obtain a baccalaureate degree.

During the freshman year, engineering students should purchase a slide rule of the log duplex decitrig type and acquire facility in its use. Every student must be prepared to take a written examination in the practical use of this slide rule by the end of the first semester.

REQUIREMENTS FOR GRADUATION

The curricula in Electrical and Mechanical Engineering require 140 credits for graduation. The curriculum in Civil Engineering requires 144 credits for graduation of which 4 credits are earned in summer surveying school.

At least two summer vacations must be spent on engineering work before graduation. A detailed report of this work must be handed to the Dean of the College of Engineering within one month of the opening of the first semester of the Senior year.

Residence of at least one year immediately preceding graduation is required for the granting of any undergraduate degree.

Senior Thesis. The Senior Thesis provides a student with the opportunity to carry out an original investigation in an orderly fashion, the momentum of progress being supplied primarily by the students' enthusiasm, interest and effort. The project is scheduled throughout the senior year and must be submitted before the student is admitted to his final examinations.

It is felt that a good undergraduate thesis:

(1) Would involve an element of originality. It should be an investigation on the frontier of the student's knowledge.

(2) Should require an element of design, an element of equipment assembly and utilizatoin of instrumentation and a test program.

(3) Includes successful evaluation of results utilizing sound test techniques and application of fundamentals of engineering. It is desirable that the evaluation require an extension of previous information to cope with the thesis project.

The Department Chairman appoints a thesis advisor. The advisor will approve the thesis subject and the method of approach, the outline of the thesis project, the initial drafts and final copy of the report as the project develops.

THE PROFESSIONAL DEGREE

For the degrees of Civil Engineer (C.E.), Electrical Engineer (E.E.), and Mechanical Engineer (M.E.), it is required that the candidate be a graduate of the College of Engineering of this University who has been engaged in acceptable professional work for a period of not less than five years after receiving the Bachelor's degree. Candidates for these degrees must declare their candidacy and file with the Dean of the College of Engineering and the Office of the Registrar a detailed statement covering their professional study and experience and an outline of their proposed thesis not later than December 31st preceding the commencement at which they wish to receive the degree, and they must submit the completed thesis not later than two months prior to the date fixed for the annual conferring of degrees

COLLEGE OF ENGINEERING

All Freshman Engineering Students

Fall Semester	R	L	U
Relig. 5 (The Sacraments)	2		½
Mil. Sci. 1 (Basic Course)	2	1	1½
Math. 3A (Anal. Geom. & Calc.)*	3		3
Chem. 3A (General Chemistry)	3	3	4
Engl. 1A (Composition and Literature)	3		3
M.E. 1 (Engineering Drawing)		6	2
M.E. 11 (Mfg. Processes)	1	3	2
or			
Elective			3
			16 or 17

Spring Semester	R	L	U**
Relig. 6 (Life of Christ)	2		½
Mil. Sci. 2 (Basic Course)	2	1	1½
Math. 3B (Anal. Geom. and Calc.)	3		3
Chem. 3B (General Chemistry)	3	3	4
Engl. 1B. (Composition and Literature)	3		3
M.E. 2 (Engineering Drawing)		6	2
Physics 8 (General Physics)	3	3	4
			18

*Students without the prescribed high school mathematics prerequisites will register for Math. 1.

**R—Recitation, L—Laboratories, U—Units.

CIVIL ENGINEERING

Sophomore Year

Fall Semester	R	L	U	Spring Semester	R	L	U
Relig. 7 (The Existence and Essence of God)	2		½	Relig. 8 (Creation)	2		½
Mil. Sci. 3 (Basic Course)	2	1	1½	Mil. Sci. 4 (Basic Course)	2	1	1½
Math. 4A (Integral Calculus)	3		3	Math. 4B (Calculus)	3		3
Physics 9 (General Physics)	3	3	4	C.E. 16 (Mechanics-Dynamics)	3		3
C.E. 15 (Mechanics-Statics)	3		3	C.E. 78 (Geology for Engineers)	2	3	3
C.E. 6A (Surveying)	3		3	Liberal Electives			3
C.E. 57 (Survey Practice)		6	2	Physics 10 (General Physics)	3	3	4
C.E. 71A (Graphic Statics)		3	1				
			18				18

C.E. 8—Summer School of Surveying—4 units

Junior Year

Fall Semester	R	L	U	Spring Semester	R	L	U
Relig. 107 (God, The Redeemer and Redemption)	2		½	Relig. 108 (Moral Guidance)	2		½
Phil. 61 (First Prin. of Phil.)	3		1½	Phil. 62 (Nature of Man)	3		1½
Math. 121 (Diff. Equations)	3		3	E.E. 136 (Electronics)	3	3	4
C.E. 116 (Mech. Materials)	4		3	M.E. 123 (Thermo-fluid Mechanics)	3		3
C.E. 166 (Materials Lab.)		3	1	M.E. 133 (Thermo-fluid Mechanics Lab.)		3	1
M.E. 119 (Thermo-fluid Mechanics I)	3		3	C.E. 122B (Structures)	3		3
M.E. 131 (Thermo-fluid Mechanics Lab. I)		3	1	C.E. 172 (Structural Design)		6	2
E.E. 135 (Elements of E.E.)	3	3	4	Electives			3
			17				18

Senior Year

Fall Semester	R	L	U	Spring Semester	R	L	U
Relig. 109 (Fundamental Apologetics)	2		½	Relig. 110 (The Sacrament of Matrimony	2		½
Phil. 63 (Know. & Reality)	3		1½	Phil. 64 (Philos. of Morals)	3		1½
C.E. 170A (Thesis)			1	C.E. 170B (Thesis)			1
C.E. 126A (Soil Mechanics)	3		3	C.E. 108 (Seminar)	1		1
C.E. 110 (Hydraulics)	2	3	3	C.E. 131A (Sanitary Engineering)	2		2
C.E. 176 (Soil Mechanics Lab)		3	1	C.E. 181 (Sanitary Engr. Lab.)		3	1
C.E. 123A (Structures)	3		3	C.E. 142A (Highways)	2	3	3
C.E. 173B (Structural Design)		6	2	C.E. 124A (Structures)	3		3
Liberal Elective			3	C.E. 174D (Structural Design)		6	2
			18	Liberal Elective			3
							18

Up to 3 units of Advanced Military Science may be substituted for technical courses with the approval of the Chairman of the Department.

ELECTRICAL ENGINEERING

Sophomore Year

Fall Semester	R	L	U
Relig. 7 (The Existence and Essence of God)	2		½
Mil. Sci. 3 (Basic Course)	2	1	1½
Math. 4A (Integral Calculus)	3		3
Physics 9 (General Physics)	3	3	4
C.E. 15 (Mechanics-Statics)	3		3
Liberal Elective			3
Speech 1			1
			16

Spring Semester	R	L	U
Relig. 8 (Creation)	2		½
Mil. Sci. 4 (Basic Course)	2	1	1½
Math. 4B (Calculus)	3		3
C.E. 16 (Mechanics-Dynamics)	3		3
E.E. 125 (Electric Circuits)	3	3	4
Physics 10 (General Physics)	3	3	4
M.E. 11 (Mfg. Processes)	1	3	2
			18

Junior Year

Fall Semester	R	L	U
Relig. 107 (God, the Redeemer, and Redemption)	2		½
Phil. 61 (First Prin. of Phil.)	3		1½
Math. 121 (Diff. Equations)	3		3
C.E. 116 (Mech. Materials)	3		3
C.E. 166 (Materials Lab.)		3	1
M.E. 119 (Thermo-fluid Mechanics I)	3		3
M.E. 131 (Thermo-fluid Mechanics Lab. I)		3	1
E.E. 126 (Elect. Circuits and Machines)	3	3	4
			17

Spring Semester	R	L	U
Relig. 108 (Moral Guidance)	2		½
Phil. 62 (Nature of Man)	3		1½
E.E. 136 (Electronics)	3	3	4
M.E. 122 (Thermo-fluid Mechanics II)	5		5
M.E. 132 (Thermo-fluid Mechanics Lab. II)		6	1
E.E. 138 (Intermediate Circuits)	3		3
Technical Electives			3
			18

Senior Year

Fall Semester	R	L	U
Relig. 109 (Fundamental Apologetics)	2		½
Phil. 63 (Know. & Reality)	3		1½
E.E. 170A (Thesis)			1
E.E. 139 (Intermediate Electronics)	3	3	4
E.E. 127 (Intermediate Machines)	3	3	4
M.E. 141 (Heat Transfer)	3		3
Liberal Electives			3
			17

Spring Semester	R	L	U
Relig. 110 (The Sacrament of Matrimony)	2		½
E.E. 170B (Thesis)			1
Phil. 64 (Philos. of Morals)	3		1½
E.E. 108 (Seminar)	1		1
Technical Electives			10
Liberal Electives			3
			17

Electives

	R	L	U
E.E. 128 (Advanced Elect. Machines)	3	3	4
E.E. 140 (Advanced Electronics)	3	3	4
E.E. 142 (Electrical Illumination)	2		2
E.E. 144 (Power Transmission Lines)	2		2
E.E. 152 (Advanced Circuits)	3		3
E.E. 160 (Feedback Control Systems)	3	3	4
E.E. 162 (Electrical Design)	3		3
E.E. 164 (Power System Studies)	3		3
E.E. 172 (Power Gen. & Dist. Prob.)	2		2

Other electives approved by the Chairman of the Department and up to 3 units of advanced Military Science may be substituted for any of the above listed electives.

MECHANICAL ENGINEERING

Sophomore Year

Fall Semester	R	L	U
Relig. 7 (The Existence and Essence of God)	2		½
Mil. Sci. 3 (Basic Course)	2	1	1½
Math. 4A (Integral Calculus)	3		3
Physics 9 (General Physics)	3	3	4
C.E. 15 (Mechanics-Statics)	3		3
M.E. 15 (Instrumentation) or C.E. 6A (Surveying)	1	3	2
Liberal Electives	3		3
Speech	1		1
			18

Spring Semester	R	L	U
Relig. 8 (Creation)	2		½
Mil. Sci. 4 (Basic Course)	2	1	1½
Math. 4B (Calculus)	3		3
C.E. 16 (Mechanics-Dynamics)	3		3
E.E. 125 (Elect. Circuits)	3	3	4
Physics 10 (General Physics)	3	3	4
Speech		2	1
			17

Junior Year

Fall Semester	R	L	U
Relig. 107 (God, The Redeemer and Redemption)	2		½
Phil. 61 (First Prin. of Phil.)	3		1½
Math. 121 (Diff. Equations)	3		3
C.E. 116 (Mech.-Materials)			3
C.E. 166 (Materials Lab.)		3	1
M.E. 119 (Thermo-fluid Mechanics I)	3		1
M.E. 131 (Thermo-fluid Mechanics I)	3		3
E.E. 126 (Elect. Circuits & Machines)	3	3	4
			17

Spring Semester	R	L	U
Relig. 108 (Moral Guidance)	2		½
Phil. 62 (Nature of Man)	3		1½
E.E. 136 (Electronics)	3	3	4
M.E. 122 (Thermo-fluid Mechanics II)	5		5
M.E. 132 (Thermo-fluid Mechanics Lab. II)		3	1
M.E. 118 (Machine Design)	1	6	3
Technical Electives			3
			18

Senior Year

Fall Semester	R	L	U
Relig. 109 (Fundamental Apologetics)	2		½
Phil. 63 (Know. & Reality)	3		1½
M.E. 170A (Thesis)			1
M.E. 141 (Heat Transfer)	3		3
M.E. 160 (Mgt. Engineering)	3		3
M.E. 119 (Machine Design)	2	3	3
M.E. 134 (M.E. Laboratory)		3	1
Liberal Electives			3
Technical Electives			2
			18

Spring Semester	R	L	U
Relig. 110 (The Sacrament of Matrimony)	2		½
Phil. 64 (Philos. of Morals)	3		1½
M.E. 170B (Thesis)			1
M.E. 108 (Seminar)	1		1
M.E. 126 (Engr. Review)		3	1
Technical Electives			10
Liberal Electives			3
			18

Electives

	R	L	U
M.E. 120 Machine Design	2	1	3
M.E. 142 (Heat Transfer)	2	3	3
M.E. 143 (Machine Vibrations)	2		2
M.E. 145 (I.C. Engines)	3	3	4
M.E. 147 (Metallurgy)	1	3	2
M.E. 150 (Heat., Vent. & Air Conditioning)	3	3	4
M.E. 194 (Power Plant Design)	2	1	3
M.E. 150 (Advanced Mechanics and Materials)	3		3
M.E. 160 (Advanced Fluid Mechanics)	3		3
E.E. 160 (Feedback Control Systems)	3	3	4
Physics 120A,B (Atomic & Nuclear Physics)	3		3
Math. 110A (Advanced Engineering Mathematics)	3		3

INDUSTRIAL ENGINEERING OPTION IN MECHANICAL ENGINEERING

Senior Year

Fall Semester	R	L	U
Relig. 109 (Fundamental Apologetics)	2		½
Phil. 63 Knowledge & Reality)	3		1½
M.E. 170A (Thesis)			1
M.E. 160 (Mgt. Engineering I)	3		3
M.E. 119 (Machine Design)	2	3	3
M.E. 141 (Heat Transfer)	3		3
M.E. 134 (Senior Laboratory)		3	1
Technical Electives			2
Liberal Electives			3
			18

Spring Semester	R	L	U
Relig. 110 (The Sacrament of Matrimony)	2		½
Phil. 64 (Philos. of Morals)	3		1½
M.E. 170B (Thesis)			1
M.E. 108 (Seminar)	1		1
Technical Electives			10
Liberal Electives			3
			17

Electives

	R	L	U
B.A. 10A (Accounting)	3	3	4
B.A. 10B (Accounting)	3	3	4
B.A. 40 (Statistics)	3	3	4
B.A. 160 (Industrial Org. Mgmt.)	3		3
Econ. 150 (Labor Problems)	3		3
M.E. 161 (Management Controls)	3		3
M.E. 162 (Methods Engineering)	3		3
M.E. 163 (Work Measurement and Wage Payment)	3		3
M.E. 164 (Management Engineering II)	3		3

College of Law

Bergin Hall

COLLEGE OF LAW

EDUCATIONAL POLICY, PURPOSE AND SCOPE

As an integral part of a Jesuit University, the College of Law aims at developing lawyers who are competent and ethical. To this end, a three year full-time curriculum is offered which is directed to a study of the processes by which the courts and other judicial bodies decide our controversies, and a study of the legal rules and principles which guide them. As observed by many legal educators, "Law is not so much a body of rules as it is a process of reasoning."

To this general purpose the College of Law specifically aims at developing: First, a thorough training in the fundamental processes, principles and reasonings of English and American Law, with the foremost modifications peculiar to the State of California; Second, to guide the student towards the actual practice of the law and passage of the State Bar Examinations; Finally, to carry the student's high moral principles into the professions of law by a conscious emphasis on the great contribution the lawyer can make to society.

The general method of instruction followed is the Case System, however, study-syllabi are prepared by the professors which give direction, emphasis and basic analysis to the student in the preparation of his own note material. "To Challenge," yet "To Guide" is the underlying philosophy of the College of Law.

It is the conviction of those who are charged with the administration of the College of Law that the most effective teaching frequently is not teaching at all in any formal sense; nor is the intellect developed or moral character increased by the mere imparting of information in formal school sessions. With these convictions in mind, the College of Law has been definitely committed to the policy of being and remaining a small law school in which the greatest intimacy and contact may be maintained between teacher and student not only during formal sessions of class but constantly throughout the day. Each class room was built to accommodate not more than fifty students, thus insuring ample opportunity for all students to participate fully in class discussions. The faculty offices have been located but a few steps from the library and all of the full-time faculty members are required to hold themselves available for consultation with students throughout the day.

PRE-LEGAL PREPARATION

Beyond the requirements of entrance, no specified pre-legal course is demanded; however, since the emphasis in any legal education must continue to be upon the development of the ability to analyze and synthesize, and then to give clarity and conciseness to the expression of this ability, those undergraduate courses which advance this general development should be pursued. **ANY** subject may be taught and studied from an analytical point of view, including those of the fine arts, so that any sound program leading to an academic degree may be followed. However, there are certain subjects which undoubtedly lend themselves more to this growth than others: philosophy, logic, mathematics, the physical sciences, social sciences, to name but a few.

Of great importance to the success of a student in law is the ability to express his learning in clear, concise terms. Having once analyzed a problem, the process is futile without the ability to express those thoughts

in adequate written and oral English. It is, therefore, recommended that all pre-legal students avail themselves of three years of college English, emphasizing expository and argumentative composition, both written and oral. Since all examinations in the College of Law and before the State Bar of California are written, this suggestion is most vital.

Finally, it is imperative that good study-habits be developed. Beyond the mere expenditure of time, there must be a **planned, mature, self-scheduled** and **self-disciplined** program of study. Those pre-legal students who are capable of tackling, organizing and successfully concluding a research problem on their own initiative will find the three year study of law both stimulating and highly profitable.

LAW LIBRARY

The Law Library is located in Bergin Hall. The Law Library is the laboratory of the law student.

The rapidly growing collection contains all the required materials of the Association of American Law Schools. The Library consists of carefully selected Materials in the fields of Anglo-American Statutory, Decisional, Text Book and Periodical sources. Special fields of development have been in the Taxation and Medico-Legal Jurisprudence areas.

The Library has been developed as the working library for the staff and students of the College of Law.

The collection is classified and catalogued by author, subject and title entry. The Librarian issues a monthly Library Bulletin to the faculty of the College of Law, reporting new additions in library literature, and library news of interest to faculty, students and lawyers.

MOOT COURT

It is the conviction of the faculty that law graduates are inadequately prepared to meet the problems of trial practice. In keeping with its policy of teaching law students to put into actual practice the legal principles and theories learned in the classroom, the College of Law maintains a practice or moot court program. Actual cases, both civil and criminal, are tried.

The Moderator of the practice court prepares the facts from authentic cases. The Moderator then assigns first and second year law students to act as witnesses and gives to them their testimony. The third year students then interview these witnesses for the purpose of preparing their case for trial. The pleadings and answers are prepared; the indictments and pleadings thereto are presented. A judge from the Superior Court of the State of California presides. The jury is selected from volunteers in our neighboring undergraduate institutions.

The evidence is presented, the student attorneys conduct the examination, the cross-examination and closing arguments. The jury deliberates and a verdict is rendered. It is our belief that such a program better prepares a student for the actual practice of the law.

Subsequent to the trial a critique is held by the Presiding Judge. All of the students of the College of Law are required to attend the practice court sessions and the critique.

APPELLATE MOOT COURT

Students in the second year of the College of Law are required to participate in the Appellate Moot Court Program.

This program is under the supervision of the Director of the Appellate Moot Court. The Moot Court Committee of the Student Bar Association supervises the mechanics of the program. The Court consists of three members selected from the judiciary and members of the local Bar As-

sociation. Individual citations are awarded to outstanding participants in this program.

A faculty committee consisting of the Dean and two other members of the faculty select the outstanding members of the program to represent the College of Law in the State and National Appellate Moot Court Competitions.

THE SANTA CLARA LAWYER

The student publication of the College of Law is the "Santa Clara Lawyer," published four times during the academic school year.

THE STUDENT BAR ASSOCIATION

The Student Bar Association is the student governing body of the College of Law. This organization includes all students in the College. Our Student Bar Association is a charter member of the American Law Students Association, which Association is sponsored by the American Bar Association. The purpose of the Association is to promote among the law students a consciousness of professional responsibility; to provide a medium for the promotion of student activities generally. The Student Bar Association is responsible for the delegation of tutors in the tutoring program. Through the efforts of the Student Bar Association a continuous program of Moot Court activities are promulgated through the school year.

TUTOR PROGRAM

Under the supervision of the Dean of the College of Law, outstanding second and third year students are selected to carry on a program of tutorship for incoming first year law students. This is a program in which the second and third year students contribute their time, energy and experiences, and in particular, their knowledge to the freshman law students. Upon arrival at the College of Law, the tutor selected contacts his group, consisting of not more than four freshmen. He advises them that he is available at all times for assistance in the study of law. He indicates to them the methods of approach and application. The tutor gives his group an examination, corrects the examinations, and advises his freshmen accordingly. The results are then presented to the full-time faculty member in charge, who then discusses the problems, if any, with the individual freshman law student.

Group seminars are held weekly, under the tutorage of the group leader.

This is a voluntary program, borne of the democratic nature of the College of Law.

ADMISSION REQUIREMENTS AND PROCEDURE

1. General Information

Admission to the College of Law is on a selective basis. The Committee on Admissions will consider carefully the qualifications of each applicant as to character, intellectual ability and professional promise.

The College of Law will consider for admission applicants presenting credits for at least three years of acceptable college work. The applicant must have earned not less than 90 college credits (semester hours) or 135 quarter units of academic credits which have been passed with a scholastic average at least equal to the average required for graduation in the Institution attended. Courses without intellectual content of substantial value are not regarded as acceptable. All grades will be entered in the compilation, including failures received in courses which have been repeated and passed.

In addition to the scholastic requirements above, all entering students are required to take the Law School Admission Test, administered by the Educational Testing Service. Applicants intending to take the test may obtain detailed information by writing to the Office of the Dean, College of Law, University of Santa Clara.

First year students must also submit with their application at least three letters of recommendation, as to their character and integrity. Whenever possible, character references should include a member of the Bar.

2. Combined Program

Students in the College of Arts and Sciences or in the College of Business Administration of the University of Santa Clara, may enter into a course of study, the successful completion of which will enable them to apply credits from the first year of the College of Law towards the requirements for the appropriate Bachelor Degree. The combined program enables the student to obtain a college degree and a Bachelor of Laws degree in six years.

Those students who are interested in the combined program should consult with their respective Dean concerning the terms and conditions of the program.

3. Special Students

In exceptional cases a person 23 years of age or over, not meeting the foregoing scholastic requirements, but whose experience in business and whose private study had made up for his lack of college training, and whose maturity and seriousness fit him in the discretion of the Committee on Admissions for the study of law may be admitted on a probationary basis.

The admission of Special Students is not encouraged and the quota of such students is limited. The number of special students admitted each year shall not exceed 10% of the average number of regular students admitted by the school as beginning regular law students during the preceding two years.

A special student pursues the same course of study under the same discipline as a regular student and shall be entitled upon graduation to the degree of Bachelor of Laws.

4. Advanced Standing

Any person who has been in regular attendance for at least one academic year at another Law School, having similar admission requirements, and approved either by the American Bar Association or the Association of American Law Schools, may in the discretion of the Committee on Admissions, and on such terms as it may prescribe, receive credit for the work done at such other law school not exceeding, in any case, two years. The last year must be spent in residence in the College of Law.

5. Auditors

Members of the Bench or Bar may be enrolled as auditors in specific subjects in the fields of their professional interests. Such persons pay the prescribed auditor's fee, but take no examinations and receive no academic credit for the work completed.

6. Admission Procedure

a) A student seeking admission to the College of Law should file an application with the Registrar of the University. The required application

form may be obtained from the Registrar or the Office of the Dean. The application shall be accompanied by a service fee to the amount of $5.00.

b) It is necessary that all applicants take the Legal Aptitude Test. Information as to the time and place of the test may be secured by writing to the Office of the Dean, College of Law or the Office of the Registrar.

c) The application must be supported by official transcripts of the student's complete academic record at each institution previously attended. An applicant still pursuing his pre-legal studies should present transcripts of the work completed to date and the courses in which he is presently enrolled.

d) Upon notification that the application for admission has been approved, information will be forwarded as to the date of registration.

e) Upon notification of acceptance, it is necessary that a check or money order in the amount of $50.00 be forwarded to the Admissions Office of the University of Santa Clara. This fee will be used as a deposit on tuition.

LAW SCHOLARSHIPS

Law Scholarships are available for those students who give promise of outstanding careers as lawyers and public leaders. These scholarships are available for incoming students. In order to qualify for a scholarship consideration will be given both to need and scholastic achievements. The continuation of the scholarship depends on the maintenance by the recipient of superior achievement in the study of law. All applications shall be made through the Office of the Dean.

ADMINISTRATION AND SUPERVISION

A. Registration:

Directions for registering are mailed to each applicant with his letter of acceptance.

B. Attendance:

Regular and punctual attendance at all classes is required. Records are computed from the first meeting of the class and not from the date of a student's entrance. It is within the discretion of each instructor when tardiness shall be regarded as an absence.

Any student who, during a semester, has been absent from a class more than twice the number of times that class meets per week is disqualified from that course and will receive a failure in the subject. Attendance records are kept from the first day of class instructions.

C. Examinations:

Written final examinations are required at the end of each semester in all courses. All written examinations are conducted under the number system, that is, the students remain anonymous to the grader. Additional examinations may be scheduled at the option of the faculty. If a student is unable to take an examination at the time scheduled, he will notify the Office of the Dean in writing of such absence and the reason therefor. If the excuse is not acceptable, or if the student fails to give prompt notice, a grade of "F" will be recorded. The fee is $15.00 for all deferred examinations.

When a student fails a course he will receive an "F". If he has a sufficient overall average (see paragraph F this section) he may be per-

mitted to remain in law school and to retake the failed examination at the next regularly scheduled examination. Upon retaking the examination he will receive one grade lower than he actually makes on the examination. For example, he will be given if a student receives a "B" on his re-examination, he will be given a "C," etc. No student will be permitted to repeat a failed course. If the student successfully passes the re-examination, the failed examination will not be computed in his overall average.

D. Academic Standing:

Each student of the College of Law must maintain satisfactory academic standing as a pre-requisite to continued attendance in the College. The basis for determining academic standing are the results of the final written semester examinations.

E. Grading:

The grade earned in each course is recorded by alphabetical letter. The grade of "A" denotes outstanding scholarship; "B" superior work; "C" satisfactory work; "D" unsatisfactory work (sufficient only for residence credit); "F" failing work, insufficient for scholastic and residence requirements. A student's academic rank is determined by his grade point average, which is ascertained by dividing the number of units of work completed into the number of grade points scored in accordance with the following norms.

A candidate for a degree must gain not only the number of credit hours required in his college, but his work must reach a certain standard of excellence. In addition to the required number of credit hours necessary for graduation, each student must earn an equal number of credit points, or an average mark in all subjects of C or better.

For a grade of A in a given course a student will receive four times as many credit points as there are credit hours in the course; for a grade of B, three times as many credit points; for a grade of C, twice as many credit points; for a grade of D, as many credit points as credit hours; while F will be charged as attempted, but no credit points will be given.

F. Scholarship:

First year students who fail to attain an over-all "C" (2.00) average at the end of their first full year may be required to withdraw from the College of Law.

No student will be permitted to register for the work of the third year unless he has attained an over-all "C" (2.00) average at the end of the first two years.

G. Graduation Requirements:

In order to graduate, the student must:

1. Have received credit for at least 86 units of law, exclusive of Survey of Ethics. (A "unit" is the equivalent of one hour per week for one semester.)
2. Have obtained in the work of his third academic year in law a general grade-point average of "C" with a weighted average of "C" for the work of the entire three years.
3. Have fulfilled the requirements of residence for three academic years in either this College of Law or some other approved law school, the last academic year of which, in any event, must have been spent in this College of Law.

4. The degree of Bachelor of Laws will be conferred on those students who have fulfilled the requirements in 1, 2, and 3 above.

The degree of Bachelor of Laws will be conferred on those students:

Who possess academic degrees before beginning the study of law and have satisfied the requirements set down in 1, 2, 3 and 4 above.

Who have completed three years of college work leading to an academic degree and have satisfied the requirements set down in 1, 2, 3 and 4 above.

Who have been special students and have satisfied the requirements set down in 1, 2, 3 and 4 above.

No student in the College of Law is permitted to take a State Examination for admission to the Bar before he has completed successfully the course of study prescribed by the College of Law for the LL.B. degree, and until such successful completion of the course has been certified to by the Dean of the College of Law. Immediate expulsion from the College of Law will follow any violation of this requirement.

H. Discipline:

Students must observe the general discipline regulations of the University of Santa Clara, as well as rules of the College of Law. The administration reserves the right to terminate or restrict the attendance of any student at any time, or to remove from the list of candidates for a degree the name of any student should it be in the interest of the University.

I. Rights Reserved:

The University and the College of Law reserves the right to advance the requirements for admission or graduation; modify the arrangement, contents or materials of courses; change tuition fees and any other regulations affecting the student body. Such changes shall become effective whenever the administration shall determine and may operate retroactively.

J. Graduation Honors:

A candidate for the Bachelor of Laws degree who has a grade point average of 3.00 to 3.24 graduates Cum Laude; one who has a grade point average of 3.25 to 3.49, Magna Cum Laude; and 3.50 and over, Maxima Cum Laude.

SUMMER SESSION

The courses in Law in the summer session are open to members of the Bar and to students who have satisfactorily completed their first year in law.

Courses taken in the summer session may be credited toward the professional degree, but time so spent may not be counted as a part of the period of residence required for the degree. In any case, it will generally be found advantageous to take one or more of the courses offered in the summer in order to increase an opportunity for the election of more advanced or specialized courses in the third year.

For the summer session any applicant who submits proof of enrollment in good standing at a member school of the Association of American Law Schools may take courses for credit to be allowed by his parent school. The College of Law issues a separate bulletin for the summer session. Copies of the bulletin or information concerning the curriculum may be obtained by writing to the Office of the Dean or the Registrar.

No student will be allowed to attend summer sessions unless he has completed one full academic year in good standing at this College of Law or at his parent Institution.

SCHOOL OF SACRED THEOLOGY

Administrative Officers

Louis C. Rudolph, S.J., President

William A. Huesman, S.J., Dean

Francis L. Sheerin, S.J., Librarian

General Information

The University, renewing and strengthening earlier ties, has granted effective for the academic year 1957-58 and thereafter, the status of affliation to Alma College, Los Gatos, California, as the University's School of Sacred Theology. Alma College, whose present registration is limited to members of the Society of Jesus in training for the priesthood, was formally incorporated by an act of the State of California, October 23, 1934, with the power to grant academic degrees; on August 22, 1945, it was given the status of a Pontifical Faculty of Theology by the Holy See and empowered to grant canonical degrees, retroactive to the date of the College's inception.

The affiliation consists in the following:

(1) The University is responsible for the academic performance of the School of Sacred Theology, and to this extent has a paralleling authority over the academic operation of Alma College. For this academic responsibility and authority the University acts as usual through its Board of Trustees, President, Academic Council (on which the Dean and another member of the Theology Faculty are seated), Academic Vice-President, Head Librarian and Registrar. Two other Committees review further appropriate matters, namely the Committee on Admissions and Academic Progress, and the Committee on Rank and Tenure, for areas involving standards and procedures. Graduates of Alma College receive appropriate degrees, the S.T.L. or the S.T.B., as approved candidates of the affiliated School of the University of Santa Clara.

(2) Alma College is a non-profit tax-exempt educational corporation, enjoying canonical status as a Pontifical Faculty of Theology.

Purposes and Objectives

The School of Sacred Theology has a threefold purpose: First, to give the students a formation in the sacred and allied disciplines; second, to train them in the knowledge of source material, the practice of scholarly work and investigation, and the exercise of the art of teaching; third, to cultivate and advance knowledge in the field of sacred sciences.

Towards the attainment of these goals, the School of Sacred Theology defines its specific academic and professonal objectves as follows: **Main objective**, the acquisition of that degree of theological formation necessary for the future activity of its graduates, whose interests are inevitably wide and varied, — hence the acquisition of a **corpus doctrinae** derived from theological sources and method, and a knowledge of theological sources, methods and techniques; **Concomitant and correlative objectives,** to make theology a vital influence in the lives of the students, to render theology the continuation and crown of the liberal education previously received, to impart the skills and techniques necessary in the priestly ministry, e.g., liturgical action, sacred eloquence, pastoral guidance, and to develop a recognition of the relevance of theology to the needs and concerns of man today.

Library

The library of the School of Sacred Theology is located on the Alma College campus, in its own building of modern design, completed in 1950, with a capacity of 110,000 volumes.

The book collection presently numbers over 45,000 volumes, primarily in the field of historical and current theology and collateral subjects as befits a professional library. The collection is particularly strong in biblical, patristic, conciliar, and papal documents in the works of the major dogmatic and moral theologians, in biblical commentaries, in canon law, and in modern theological journals.

The library makes readily available to faculty and students all the scholarly materials needed for research and instruction leading to licentiate and doctoral degrees in theological science according to Pontifical standards.

The library is further equipped with photostat camera, with microfilm reading apparatus, and with abundant carrels for private study.

Admission

Only students who have attained a Master's degree or its equivalent in Philosophy are admitted to courses leading to the Licentiate in Sacred Theology (S.T.L.); a Bachelor's degree in Philosophy is required for entrance to the course leading to the Bachelor of Sacred Theology (S.T.B.).

Program and Degrees

Curricula

There are two curricula of study, the Licentiate curriculum in which the emphasis is on theology as the disciplined formation of the student in the field, so that in time he can become a master of it and its method, and the Bachelor curriculum in which emphasis is placed upon the acquisition of theological information, so that the student learns what theology has to offer and becomes able to communicate its findings adequately to all classes of men.

Towards the accomplishment of these objectives, as they are to be differently achieved through the two curricula, the pattern of each curriculum follows a hierarchical order according to the greater importance and excellence of the various subjects.

The division of subjects in the Licentiate curriculum, as outlined in the **Statuta Facultatum Theologiae et Philosophiae** (1934) of the Society of Jesus, and develop more fully in its **Ratio Studiorum Superiorum** (1954), is as follows:

(1) **Principal Disciplines** (subjects essentially required for the accomplishment of the aims): Fundamental and Dogmatic Theology; Moral and Pastoral Theology; Sacred Scripture; Canon Law; Ecclesiastical History; Patrology, and Christian Archaeology.

(2) **Auxiliary Disciplines** (subjects necessary for a proper treatment of the principal disciplines): Biblical Greek; Biblical Hebrew; Liturgy and its History; Oriental Theology; Ascetical Theology.

(3) **Special Disciplines** (Complementary courses leading to a more thorough understanding of certain of the principal and auxiliary courses or to certain skills): various elective courses, as advanced work in the biblical languages; Sacred Eloquence; Ecclesiastical Rites.

Students in the Licentiate curriculum must also participate in a research seminar to demonstrate their aptitude for scholarly investigation in the field of theology.

Students in the Bachelor curriculum are not required to follow courses in Biblical Greek, Biblical Hebrew, Oriental Theology, and the special disciplines; but in keeping with the aims of this curriculum, there is added instruction in catechetical and pastoral methods, and in place of a research seminar there are academic demonstrations or exercises, through which the students must manifest their fitness to apply theology to the needs of the ministry.

Degrees

Students complying with all the requirements above outlined, and attaining a sufficiently high level of academic performance in the various subjects to merit the qualification "probatus", after submitting a satisfactory thesis and successfully passing a comprehensive examination in the whole field of Sacred Theology, are awarded the degree of Licentiate in Sacred Theology (S.T.L.).

Students in the Bachelor curriculum may gain the degree of Bachelor in Sacred Theology by successfully passing all the prescribed courses, as well as a comprehensive examination in the whole of Sacred Theology.

THE GRADUATE DIVISION

History.

The University catalogue for the academic year 1912-13 set down the aim and scope of what was then called the Graduate Department as follows:

> "The Graduate Department offers students who have attained to Academic Degrees, studies leading to the higher ones of Master or Doctor as the case may be. The determination of these courses rests with the Committee on Post-graduate Studies. A sufficiently wide option is allotted, much of the instruction being in the form of direction along lines of original research. Courses may be had in Philosophy, English, Latin, Greek, Mathematics, Sociology, and Economics, as well as in the professional Colleges of Law, Engineering and Architecture."

From the academic year 1935-36 until 1957-58 no graduate courses were offered.

Present Offerings.

The administration of the University re-established a Graduate Division in the academic year 1957-58. Graduate and graduate level courses as listed in the current University catalogue are offered leading to the degree of Master of Arts or Master of Science. In the College of Arts and Sciences, graduate courses are offered by the following departments: Chemistry, English, and History. Other colleges and departments of the University will announce graduate courses as the program develops.

Organization.

The Graduate Division is an integral division of the University administered by the Committee on Graduate Studies. This committee, an administrative board appointed by the President of the University, is responsible for the organization and supervision of all graduate courses and programs. Though the faculty for the Graduate Division is drawn from the various faculties of the University, the Committee on Graduate Studies is autonomous and controls the activities of the division under the supervision of the Director.

Admission.

A formal application is required for admission. This may be obtained by addressing the Office of the Registrar. Application should be made at least one month before the beginning of the fall semester. Information regarding the standards of admission, as well as requirements for the degree, may be obtained by addressing the Office of the Registrar.

TEACHER EDUCATION PROGRAM

Arthur T. Phelps, Ed.D.
Director, Teacher Education Program

The University's Teacher Education Program includes the fifth or post-graduate year of courses requisite for acquisition of the General Secondary Teaching Credential from the State Department of Education. Recipients of this credential are authorized to hold positions in the public high schools and junior colleges of the State.

Teaching majors and minors are offered in Business Administration, English, Foreign Language (French, German, Latin, Spanish), Life Sciences and General Science, Mathematics, Physical Science and General Science, and Social Studies. A minor only is offered in Speech.

REQUIREMENTS FOR THE GENERAL SECONDARY CREDENTIAL

Students who would qualify for the General Secondary Credential must fulfill the following **general** requirements:

1. **Health Certificate.** The candidate must present a satisfactory certificate of health from the College Physician or other approved physician. A form for this purpose is provided by the University.

2. **Citizenship.** The State Depatrment of Education requires each applicant for a teaching credential to be a citizen of the United States. Non-citizens who have filed first papers are eligible to apply for short-term credentials.

3. **Oath of Allegiance.** The State Department of Education also requires each applicant for a credential to take the oath of allegiance to the United States.

4. **American Institutions.** The State Department of Education requires the completion of a course in the Constitution of the United States. This requirement may be satisfied by completing one of the following courses: Political Science 1, 20A-20B, 113, or History 171A-171B.

5. **Interviews.** Every applicant for a credential must hold a personal interview with the members of the Committee on Teacher Education. Appointments for such an interview should be arranged at the offices of the Director of Teacher Education, Room 207, Delia Walsh Hall.

6. **Approval of Schedules.** It is desirable that early in his academic career the prospective candidate for a credential consult the Chairman of the Department of Education or the Director of Teacher Education for approval of his study program. Graduates of other institutions will receive an evaluation of their completed courses when they apply for admission to post-graduate work as candidates for the teaching credential.

7. **Admission to Graduate Standing.** Prospective candidates for the General Secondary Credential must be admitted to the Graduate Division of the University. For this reason a formal application must be filed with the Director of the Graduate Division, Room 105, Delia Walsh Hall, at least one month before the beginning of graduate residence. The application must be accompanied by the five dollar ($5.00) application fee. In addition the candidate must furnish transcripts of all high school, college and/or university work; scores as required from the Graduate Record Examination. The Graduate Office will issue a statement of the student's official status.

8. **Admission to Candidacy.** The Committee on Teacher Education will admit to the Teacher Education Program only those students who have maintained a grade-point average of at least 2.5 (C plus) for the work undertaken in the last two undergraduate years.

9. **Application for Practice Teaching.** Applicants for admission to the supervised teaching courses (Education 320A, 320B) must apply to the Director of Teacher Education in Delia Walsh Hall by April 15, 1958, for the Fall semester of 1958. Attention is called to the fact that supervised teaching courses begin with the opening of the Fall and Spring semesters in the public schools.

The candidate for the General Secondary Credential must satisfy the following **specific** requirements:

1. He must spend two graduate semesters at the University during which he completes a minimum of thirty units of upper division and graduate work with a grade-point average not lower than 2.75 when 2 equals C. At least six of these units must be in the field of the teaching major or minor.

2. He must satisfy the State requirement of forty semester hours of general education with a minimum of six semester hours in each of the following four areas:

(a) Science and mathematics.
(b) Practical and fine arts, such as art, music, health education, industrial arts, physical education and similar studies.
(c) Social studies.
(d) Communicative arts, such as languages, literature, speech and similar studies.

3. He must complete with a scholarship average of at least 2 when 2 equals C the following twenty-four units in education:

Introduction to Educational Psychology — Education 113 ..... 3 units
Secondary Education and the Curriculum — Education 112 ..... 3 units
Psychology of Adolescence or Growth and Development — Education 117 or 118 ..... 2 units
Audio-Visual Aids in Teaching — Education 116 ..... 2 units
Directed Teaching — Education 320A and 320B ..... 6 units
Methods, Management, and Observation — Education 114 ..... 2 units
Introduction to Tests and Measurements — Education 120 ..... 2 units
Principles and Practice of Guidance — Education 126 ..... 2 units
Principles and History of Education — Education 111 ..... 2 units

(a) Psychology 1 and Philosophy 22 or equivalents are prerequisites to these courses.

4. He must complete a teaching major and a teaching minor from at least two acceptable teaching fields.

The requirements for teaching majors apply to the General Secondary Credential only and will not ordinarily meet the requirements for the baccalaureate degree at the University of Santa Clara.

A student who plans to obtain his Bachelor's degree at the University of Santa Clara and to obtain a General Secondary Credential later should consult the chairman of the subject department regarding requirements for the baccalaureate major.

BUSINESS EDUCATION

A teaching major in Business Education consists of the following:

(a) Twenty-five semester hours of work in subjects basic to business and commerce which must include at least one course from each of the following fields:

(1) Principles of economics, including business economics.
(2) Typewriting.
(3) Accounting.
(4) Business law.
(5) Introduction to business, or business organization and management.
(6) Business mathematics, or business communications (business English or business correspondence).
(7) Consumer economics, or consumer education, or economic geography.
(8) Salesmanship, or retailing, or marketing.

(b) Twenty semester hours of work in at least two of the following fields of concentration, one of which must be accounting or secretarial training:

(1) Accounting Field. A minimum of eight semester hours including a course in business machines, and such other courses as: advanced accounting (in addition (a) (3)), cost accounting, auditing, income tax accounting.
(2) Secretarial Training Field. A minimum of eight semester hours including shorthand and transcription, business machines, advanced typewriting, and filing.
(3) Merchandising Field. A minimum of eight semester hours including marketing, and such other courses as retailing, merchandise information or analysis, merchandising, salesmanship, advertising. If marketing, retailing, or salesmanship were taken as basic subjects under requirements (a) (8), other courses in this area must be substituted.
(4) Business Management. A minimum of eight semester hours including such courses as business finance, statistics, real estate, insurance, foreign trade, transportation, management, personnel and labor relations, and law in addition to that in requirement (a) (4).

ENGLISH

A teaching major in English consists of at least 36 semester hours, including 12 in upper division or graduate courses. Courses must be offered in the following areas:

Composition
Literature
Speech
Dramatics or journalism
Additional preparation in composition and literature.

FOREIGN LANGUAGE (FRENCH, GERMAN, LATIN, SPANISH)

A teaching major in a foreign language consists of at least 36 semester hours, including 12 in upper division or graduate courses. Preparation must include reading and, with the exception of Latin, speaking the language, and additional courses in the same foreign language to complete the major.

LIFE SCIENCES AND GENERAL SCIENCE

A teaching major in Life Sciences and General Science consists of at least 36 semester hours, including 12 in upper division or graduate courses. Courses must be offered in the following areas:

Life science or biology
Physics
Chemistry
Additional preparation in one or more of the life sciences.

MATHEMATICS

A teaching major in Mathematics consists of at least 36 semester hours, including 12 in upper division or graduate courses. Courses must be offered in the following areas:

Basic or theoretical mathematics through integral calculus.
Additional preparation in either basic or theoretical mathematics, or in courses dealing with mathematical applications.

PHYSICAL SCIENCE AND GENERAL SCIENCE

A teaching major in Physical Science and General Science consists of at least 36 semester hours, including 12 in upper division or graduate courses. Courses must be offered in the following areas:

Physics
Chemistry
Life science or biology
Additional preparation in one or more of the physical sciences.

SOCIAL STUDIES

A teaching major in social studies consists of at least 36 semester hours, including 12 in upper division or graduate courses. Courses must be offered in the following areas:

United States history
Political science
Economics
Sociology
Additional preparation in one or more of the social studies.

The Teaching Minor. The teaching minor in any subject consists of not less than twenty units in a department other than the teaching major. Not less than nine units of this total must be in upper division or graduate courses.

5. The student must maintain the following grade-point averages when 2 equals C:

Upper division work	A grade-point average of at least 2.5
Postgraduate work	A grade-point average of at least 2.75
Education courses	A grade-point average of at least 2.0
Work in the major field	A grade-point average of at least 2.75
Work in the minor field	A grade-point average of at least 2.0

DESCRIPTION OF COURSES

and

DEPARTMENTAL REQUIREMENTS

BIOLOGY

Chairman of the Department

Lloyd L. Bolton, B.A., M.A., Ph.D.

Students who wish to make Biology their major subject should plan to meet the following requirements for graduation:

1. Biology 1A-1B and Chemistry 1A-1B must be completed with at least a C grade before beginning any upper division course in Biology. For students who, after the freshman year, obtain permission to change their major to biology, completion of Biology 2A and 2B, with at least a C grade in each, may be accepted as the equivalent of Biology 1A.
2. Biology 32 and Physics 2A-2B must be completed with at least a C grade.
3. In upper division, of the required minimum of 24 units in science, at least 20 units must be taken in Biology, and additional units should be taken in Chemistry. Chemistry 35A must be completed with at least a grade of C. Chemistry 35B and 35C is desirable for all and should be taken by those who plan professional studies in medicine.
4. a. A grade of C must be maintained in all courses in the major field.
   b. Each candidate for a degree may be required to pass a comprehensive examination in his major field. This examination may be oral, written, or both and will be scheduled within the last six-weeks period of the senior year.
   c. Upper division credit may be allowed for any units in Biology in excess of eight.

***1A. General Zoology.** An introduction to the broader principles of animal biology. Topics treated to include: protoplasm, the cell, metabolism, organ systems adaptations, inheritance, etc. The lectures are supplemented by the laboratory study of certain animal forms. Biology 1A is prerequisite to all other courses in this department except Biology 2A and 2B. Two hours lecture, six hours laboratory. Fall semester. Four units.

****1B. General Zoology.** A continuation of Biology 1A including a study of the main animal phyla and type examples of each. Two hours lecture, six hours laboratory. Spring semester. Four units.

Prerequisite: Biology 1A or 2A and 2B.

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*Formerly Biology 21.
**Formerly Biology 22.

*2A. **General Biology.** An introductory course dealing with fundamental biological processes and principles. It is designed to meet the needs of those who do not plan to proceed to more advanced work in Biology. Laboratory work is designed to illustrate and supplement the lectures. Three hours lecture, three hours laboratory. Fall semester.
Prerequisite: High School Chemistry is desirable. Four units.

*2B. **General Biology.** A continuation of Biology 2A. Spring semester. Four units.
Prerequisite: Biology 2A or equivalent.

3. **Microbiology. An introduction to elementary microbiology designed especially for students of nursing, dealing with the fundamentals of form and function of pathogenic and non-pathogenic micro-organisms such as bacteria, yeasts, molds and protozoa. Two hours lecture, six hours laboratory and demonstration. Fall semester. Four units.

4. **Introduction to Human Anatomy and Physiology. An introductory course designed especially for students of nursing. A brief survey of the structure and function of the major organ systems of the human body.
Individual dissection of an embalmed cat is required as a basis for understanding structure of organs and relationship of systems. Demonstration and laboratory study of human models, and microscopic slides of human tissues and organs. Two hours lecture, six hours laboratory. Spring semester. Four units.

32. **General Botany.** An introductory study covering basic principles of plant biology with emphasis on the morphology, physiology and phylogenetic relationships of the major plant groups. A knowledge of basic biological principles and use of the microscope is assumed. Two hours lecture, six hours laboratory. Spring semester. Four units.
Prerequisite: Biology 1A or 2A and 2B.

101. **Vertebrate Anatomy.** A comparative study of the structure, organization, adaptation and classification of the vertebrate animals. In the laboratory the student dissects the dogfish, necturus and the cat. Two hours lecture, six hours laboratory. Fall semester. Four units.
Prerequisite: Biology 1B.

102. **Vertebrate Embryology.** A study of the processes of cell division, gametogenesis, fertilization, cleavage, gastrulation, germ layer formation, organogensis and the extra-embryonic membranes. In the laboratory the processes of development are studied from gross material and serial sections. Particular attention is given to the amphibian, bird and mammal. Two hours lecture, six hours laboratory. Spring semester.
Prerequisite: Biology 1B and 101. Four units.

104. **History of Biology.** The history of the development of Biology in its various branches to their present status, with biographical sketches of the leaders in each field. The outlook for the future. Two hours lecture, normally restricted to Senior students in Biology. Fall semester.
Two units.

107. **General Histology.** A study of the cell and cellular structure and histogenesis of the basic types of tissues. Two hours lecture, six hours laboratory. Fall semester. Four units.
Prerequisite: Biology 1B and 101.

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*Formerly Biology 23 and 24.

**Biology 3 and 4 are courses specially designed for classified students, and are available for credit to regular degree candidates only by written permission of the Chairman of the Department.

109. Histological Technique. A laboratory course, supplemented by lectures and demonstrations, in the principles and use of apparatus commonly in use in biological laboratories, together with practical instruction in the more commonly used methods of preparing biological material for microscopic study. Six hours laboratory. Spring semester.
Prerequisites: Biology 1B, 101 and 107. Two units.

110. Heredity. An introductory course designed to give a working knowledge of the fundamental principles governing inheritance in plants and animals. Two hours lecture, normally restricted to Senior students in Biology. Spring semester. Two units.

111. General Physiology. A study of fundamental physiological processes based on the physio-chemical activities of the cell. Two hours lecture, six hours laboratory. Fall semester. Four units.
Prerequisites: Biology 1A and 1B or 1A and 32.

156. General Ecology. A study of plant and animal relationships and the factors which influence distribution, adaptation and succession of organisms. The content of the course will include the principles of ecology, habitats, population ecology and applied ecology. Laboratory and field work will include quantitative methods, plant and animal identification and field trips, some of which will be made on Saturdays. Two hours lecture, six hours laboratory and field. Spring semester.
Prerequisite: Eight units of Biology. Four units.

***195. Special Problems.** Individual work in some specialized branch of Biology may be taken by senior students who have shown exceptional ability. Two units.

***196. Special Problems.** Continuation of Biology 195. Two units.

****199. Research Techniques.** Supervised work for the senior thesis. One unit.

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*Formerly Biology 108.
**Formerly Biology 120.

BUSINESS ADMINISTRATION

The curriculum of the College of Business Administration extends over four years and leads to the degree of Bachelor of Science in Commerce.

The work in this college is divided into that of Lower Division and Upper Division. Students in the College of Business Administration should consult the programs listed in the section on the College of Business Administration to determine their requirements. (cf Page 77.)

1A. Principles of Accounting. Collecting, recording, presenting and interpreting financial and operating data for use of managers, investors, creditors and governmental and other interested groups. Three hours lecture. Three units.

1B. Principles of Accounting. Principles of partnership and corporation accounting; analysis and interpretation of financial statements and reports. Three hours lecture.
Prerequisite: B.A. 1A. Three units.

11. Introduction to Business. A study of the structure and functioning of business enterprise with emphasis upon the principles and methods of business. Two hours lecture. One semester. Two units.

12. Job Analysis. The course includes an analysis of the various types and kinds of jobs, getting leads, enacting sample interviews, preparing individual brochures, etc. One unit.

16. Mathematics of Finance. Compound Interest Law with applications. Nominal and effective rates of interest. Annuities. Amortization, sinking funds, bond valuations. Introduction to Mathematics of Life Insurance. Three hours lecture. Three units.

21. Introductory Cost Accounting. Accounting theory and procedures applicable to cost determination and allocation in situations involving the manufacturing and distribution of goods and services. Three hours lecture. Three units.

Prerequisites: B.A. 1A and B.A. 1B or equivalent.

22. Managerial Accounting. Cost accumulation, distribution and analysis as aids in decision making by management. Standards and budgetary techniques for cost control. Three hours lecture.

Prerequisites: B.A. 1A and B.A. 1B. Three units.

30A-B. Survey of Accounting. This course is designed to meet the needs of students who contemplate the practice of law. To that end the phases of accounting treated are those which involve a consideration of partnerships, corporations, ventures, syndicates, estates, trusts, insolvent enterprises, and the problems involving asset valuation in public utility rate cases. Two hours lecture. Two semesters. Four units.

40. Principles of Statistical Method. The object of this course is twofold: Firstly, it presents the techniques of elementary statistical analysis as tools appropriate for the study of quantitative data. Secondly, it considers the logic of statistical induction and the inherent limitations imposed thereon by the nature of the data themselves. The subject matter includes averages, variation, elementary ideas of index numbers, simple linear correlation and elementary time series analysis. Three hours lecture, three hours laboratory. Four units.

101. Statistical Analysis. Application of the methods of basic least squares with particular reference to the problems of multiple, partial, and curvilinear correlation. Special attention will be given to certain techniques appropriate to the solution of correlations involving times series. Three hours lecture. First semester. Four units.

Prerequisite: B.A. 40.

102. Statistical Analysis. The principles of statistical inference will be considered together with the problems of small samples, tests of significance, statistical estimation, contingency tables, and analysis of variance and covariance. Three hours lecture. Second semester.

Prerequisite: B.A.101. Four units.

121. Corporation Finance. An introduction to the problems surrounding the procurement of funds needed for carrying on a modern business enterprise. Topics covered will include: financial organization of modern industry; the instruments of enterprise finance; promotion and sale of securities; financing of operations of the going-concern; problems of financing growth and expansion; financial readjustments. Three hours lecture.

Prerequisites: B.A. 1A and B.A. 1B. Three units.

123. Business Finance. The instruments of business finance; the problems of policy involved in financing business corporations; the technical features of stocks and bonds, principles of capitalization, working capital management, surplus and dividend policies, business combinations, and business reorganizations. Three hours lecture. Three units.

124. Investments and Investment Institutions. As Corporation Finance deals with the problems of business management devising ways and means of procuring funds for enterprise operations, so this course

will deal with the market for funds as viewed by those individuals and institutions who are offering those funds in that market. Therefore, among the subjects to be considered will be the nature of the money market; institutions operating therein; and because of the significance of the presence of government, government control thereof. It will be presumed that a student electing this course possesses a working knowledge of commercial and central bank operations and of the fundamentals of enterprise finance. Three hours lecture. Three units.

125. Problems in Finance. In this course the problems of financing business enterprise are studied from the management point of view. The scope includes both financing of new business and of established business; and working capital financing as well as long term financing. Three hours lecture. Three units.

127. Problems in Public Finance. A continuation of Economics 120. Attention will be given to current problems in fiscal matters. Units by arrangement.

128. Business Cycles. An introduction to the analysis of fluctuations in the level of general business activity. Specific theoretical formulations explaining business cycles will be discussed. This will be followed by a discussion of the history of business fluctuations, the problem of control and the attainment of stability. Three hours lecture. Three units.

130. Accounting Valuation. A study of the theory and technique applied in the valuation of assets and liabilities in the preparation of private enterprise balance sheets and profit and loss statements. Consideration will also be given, where appropriate, to the similarities and differences between the accountants' problem of valuation and the economists' problem of value. Prerequisite: B.A. 1B. Three units.

131. Accounting; Proprietorship. Problems arising from the existence of more than one proprietor in an enterprise will be discussed as well as the technique and theory underlying the accounting for interests in the net worth of an enterprise and changes therein. About one-third of the course will be devoted to partnerships and the remaining two-thirds to corporations. Three units.
Prerequisite: B.A. 130.

132A. Accounting Problems. The theory and technique underlying the preparation of statements for certain situations will be discussed and illustrative problems solved. Among the topics discussed will be bankruptcy, installment sales, branch accounting, estates and trusts, and public accounts. Other special problems by arrangement with the instructor.
Prerequisite: B.A. 131. Units by arrangement.

132B. Continuation of 132A, with emphasis on parent and subsidiary accounting. Units by arrangement.
Prerequisite: B.A. 132A.

133. Cost Accounting. A study of the problems involved in recording the internal transactions of modern business enterprise, for use by management in control of activities. Particular emphasis is on industrial concerns but application to trading concerns, both wholesale and retail. are discussed. Particular topics include the determination of unit product costs, departmental costs, allocation of overhead, standard costs and budgetary control. Three hours lecture. Units by arrangement.
Prerequisite: B.A. 1B.

134. Accounting Systems. The theoretical and practical problems involved in setting up accounting systems will be considered with special

reference to the prompt preparation of reports for the use of management and the minimizing of costs of operating the system.
Prerequisite: B.A. 131. Units by arrangement.

135. Analysis of Financial Statements. This course is concerned with the interpretation of the statistical significance of the numerical data compiled from accounting and supplementary records. Emphasis is placed upon statistical interpretation of the typical financial statements and interim reports prepared for the use of management. Three hours lecture.
Prerequisite: B.A. 1B Three units.

136. Industrial Cost Analysis and Research. This course consists of two parts: (a) advanced study in problems of cost accounting, e.g., investigation of problems of allocation of production costs; analysis and determination of overhead cost rates; determination of differential production costs; standard setting for standard cost systems; installation of standard cost systems and their use for control; (b) production cost research in representative industrial plants in this geographic area. Two-thirds of the course time will be spent in investigations of real cost problems in these plants. This is to train the student in the practical application of cost techniques to the determination and analysis of firm costs. Three hours. One semester. Three units.
Prerequisite: B.A. 133.

137. Auditing. This course covers both theory and practice of auditing, discussion being supplemented with problems, questions, specimen working papers applicable to balance sheet audits, and laboratory work illustrating audit procedure. Auditing procedure involved in connection with cash and cash funds, receivables, inventories, investments, deferred charges, capital assets, intangible assets, liabilities, both actual and contingent, accounts showing net work, closing of an audit, and preparation of audit reports. Three hours lecture. Three units.
Prerequisite: B.A. 131.

138. Income Taxation. This course presents the underlying principles of income taxation and the special accounting and management problems involved in the determination of tax liability. The course develops the concept of taxable income and deals with special problems of individuals, partnerships, trusts, and corporation income taxes. Three hours lecture. One semester. Three units
Prerequisite: B.A. 1B.

141. Budgeting. A study of the preparation and the use of business budgets. Work in the course consists of the preparation of sales, production, materials, overhead, selling expense, and cash budgets which are assembled in a complete budget. One semester. Three units.

148. Principles of Insurance. A survey course to acquaint the student with the general principles of insurance and their application to the various branches of the field. Emphasis is placed on typical fire, automobile, liability, accident, health, and workmen's compensation contracts. Designed to assist those who will use insurance services in business. Three hours lecture. Three units.

150. Life Insurance. Studies of the nature, and of the business and personal uses of life insurance and annuities; contracts; policy conditions; selection of risks; types of carriers; mathematical bases; group, wholesale, and industrial insurance; organization, management, regulation, taxation, and investment policy of legal reserve companies. One semester. Three units.

155A (L-18A). Business Law. The nature and purpose of law and the historical development and its functions with emphasis on Con-

tracts, Agency and Sales, Bailments and Carriers, and Property. Three hours lecture. Three units.

155B (L-18B). Business Law. Continuation of Business Law 155A with emphasis on Negotiable Instruments, Partnerships, Corporations, Bankruptcy, and Real Estate. Three hours lecture. Three units.

159. Economics of Enterprise. Economic analysis with particular emphasis on the problems of the business firm in the areas of price and output. Exposition of the foregoing will be achieved primarily by centering attention first on the environment of the industry of which the firm is a part. Three hours lecture. Three units.

Prerequisites: Econ. 1A and Econ. 1B.

160. Business Organization and Management. The purpose of this course is to give the student a working knowledge of fundamental principles underlying the management of business enterprises. The student is trained in methods of identifying and evaluating the influences upon a business enterprise, and then is given a comprehensive view of modern practices of planning, organizing, and controlling various functional activities in business. Three hours lecture. Fall semester. Three units.

162A. Business Policies and Management. The purpose of the course is to develop the ability to apply economic analysis to the solution of the individual firm's problems, and to study the effect of such decisions on the economy as a whole. Included is a study of the principles involved in policy formation and the problems embodied in establishing responsibilities for the executive. Three hours lecture. Three units.

Prerequisite: Senior Standing. College of Business Administration.

163. Production Control. The problem of the production of goods. Factors which aid modern productivity. Coordination of sales and manufacturing. Organization for production control. Research. Budgets. Materials. Machine replacement. Methods and standards. Planning and routing. Operation and instruction sheets. Centralized control of production. Inspection. Measures of factory performance. Three hours lecture. Three units.

164. Time Study and Motion Analysis. Measurement of labor. Operation analysis. Motion Study. Process Charts. Laws of motion economy. Micromotion study. Film analysis procedure. Standardizing the job. Skill. Effort. Formula expression. Formula working sheets. Three hours lecture. Three units.

165. Retailing. A study of the organization and management of retail establishments. Among the topics discussed will be; store location; organization; policies; sales systems; profit; turnover; buying; the physical control of inventories; personnel; statistics; summaries for management control. Three hours lecture. Spring semester. Three units.

Prerequisite: B.A. 181.

166. Personnel Management. The purpose of this course is to give the student a thorough knowledge of the principles of scientific management and the ability to recognize the limitations and uses of the tools and mechanism of management. Throughout the course, such management devices as present-day industrial tendencies, labor maintenance and control, wage payment and wage incentives, inspection, and cost analysis are studied as aids in clarifying and solving management problems. Three hours lecture. Three units.

167. Purchasing. The procurement of materials, equipment and supplies in industrial, merchandising, governmental and institutional organizations are discussed. Topics covered include the scope of the purchasing functions, purchasing procedure, quality control, quantity control, sources

and assurance of supply and price policies. This course is designed for people in the industrial, wholesale, and retail fields. Three hours lecture. One semester. Three units.

168. **Administrative Practices.** A study of cases on human relations in business. The objective of the course is to increase each individual's ability to work effectively with others. These "others" may be superiors, equals, or subordinates. The purpose of this work is to provide each student with an attitude which will make him a more responsible member of an organization, whatever his capacity. Three hours lecture. Three units.

181. **Principles of Marketing.** The nature and importance of marketing; nature of producer and consumer; extent of and forces behind markets; marketing functions; cooperative marketing; methods and channels of distribution; the transportation problems connected with marketing; market price; government authority; trends in present marketing methods and policies. Three hours lecture. Three units.

182. **Marketing Problems.** The philosophy and technique of the scientific method applied to market problems. Practical research procedure; sources of market facts; methods of collecting and treating market data; research agencies; the development of marketing methods and policies based upon the results of market research. Three hours lecture.
Prerequisite. B.A. 181. Three units.

183. **Principles of Transportation.** An economic analysis of the principle forms of commercial transportation in the United States. The particular problems of rail, water, motor, air and pipe line transportation are considered. Three hours lecture. Three units.

184. **Advertising.** Fundamental principles; an analysis of the important psychological factors in advertising. Human wants; buying motives and reactions are studied to comprehend the effects of various practices and methods of advertising upon consumers and middlemen. Three hours lecture. Three units.
Prerequisite: B.A. 181.

185. **Salesmanagement.** This course in Salesmanagement provides the necessary background material for men and women who plan to follow a career in sales. Some of the topics which will be discussed include: Sales Planning—Routing of Salesmen and Sales Quotas, Product Planning and Product Research, Choice of Distribution Channels; Prices and Terms of Sale; Sales Programs and Sales Promotion; Sales Department Organization, Selection, Training, Compensation, and Management of the Sales Force, Inventory Policy and Control; Sales Costs and Budgets; Sales and Market Research. Three hours lecture. Three units.
Prerequisite: B.A. 181.

186. **Salesmanship.** Personal qualifications of the salesman; evaluating the needs of the prospective buyer; locating prospects; securing sales interviews; methods of arousing interest; analyzing different types of customers; how to deal with them; conducting sales demonstrations; answering objections, securing action; maintaining customer good-will. Three hours lecture. Three units.

187. **Elementary Traffic Management.** Only those people possessing a broad knowledge of traffic in all its phases are capable of solving the modern problems of carriers and shippers. This is a fundamental course in freight classification. Freight movement and routing, handling and storage, and shipping papers, based on practical experience with many constructive transport suggestions. Three hours lecture. Three units.

199A. **Business Research and Analysis.** The scope and importance of Business and Sales analysis and planning; types of research, collecting

and analyzing data; presenting and interpreting results. Three hours lecture. One semester. Three units.

199B. Business Research and Analysis. Continuation of B.A. 199A with special emphasis on individual research. Three hours lecture. One semester. Three units.

CHEMISTRY

Chairman of the Department
Joseph F. Deck, A.B., M.S., Ph.D.

Students who wish to make Chemistry their major subject must complete the following lower division courses: Chemistry 1A and 1B, Chemistry 16, Chemistry 35A, B, and C, Physics 8, 9, and 10, Mathematics 3A and 3B, and Mathematics 4A and 4B. A grade of C must be maintained in each course.

The major undergraduate program must include the following upper division courses in Chemistry: Chemistry 130, Chemistry 150A, B, and C, Chemistry 180, Chemistry 116. In addition, from 4 to 6 units of advanced work in Chemistry must be elected. Elected topics must include 2 or more series in upper division courses, such as, Inorganic Chemistry, Advanced Physical Chemistry, or Advanced Inorganic Chemistry. With the permission of the Chairman of the Department, certain advanced courses in Physics may be substituted for an advanced elective course in Chemistry. The American Chemical Society recommends a reading knowledge of German.

The Master's Degree — See the **Announcement of the Graduate Division.**

For the Teaching Major — Refer to index "Teacher Education Program".

1A. Inorganic Chemistry. A study of the fundamentals and properties of the elements and compounds with solution of problems. Includes a thorough discussion and mastery of the laws and theories of chemistry. Three hours lecture, six hours laboratory, Fall semester. Five units.

1B. Inorganic Chemistry. A continuation of Chemistry 1A. The laboratory study includes a course in qualitative analysis, consisting of a systematic analysis of cations and anions, together with quizzes and solution of illustrative problems. Three hours lecture, six hours laboratory. Spring semester. Five units.

2A. General Chemistry. Discussion of elementary principles and properties of the more important elements with their compounds. Includes a systematic study of important theories. Laboratory and quiz to accompany the lectures. This course is designed to meet the science needs of those who do not plan to proceed to more advanced work in chemistry. Three hours lecture, three hours laboratory. Fall semester. Four units.

2B. General Chemistry. A continuation of Chemistry 2A. Descriptive study of the elements is continued, together with a brief study of qualitative analysis. Spring semester. Three hours lecture, three hours laboratory. Four units.

3A. General Chemistry. Fundamental laws of chemistry. Chemical equations. Properties of elements and compounds. Application of chemical principles and calculations to engineering projects. This course is intended primarily for engineering students. Three hours lecture, three hours laboratory. Fall semester. Four units.

3B. General Chemistry. A continuation of Chemistry 3A. The laboratory work presents an introduction to the methods of detecting metals and non-metals commonly encountered in engineering practice. Two hours lecture, one hour quiz or problem session. Three hours laboratory. Spring semester. Four units.

16. Quantitative Inorganic Analysis. An introduction to the technique of volumetric and gravimetric methods of inorganic analysis. Two hours of lecture, six hours of laboratory. Fall semester. Four units.

20. Evaluation of Chemical Data (Experimental). A discussion on the evaluation of chemical statistics, precision and accuracy, significant numbers, and other factors to help the student properly read chemical data. One unit.

35A. Organic Chemistry. The Aliphatic Compounds. Introduction to organic chemistry. A course dealing with the chief classes of the chain compounds of carbon. Three hours lecture. Spring semester. Three units.

35B. Organic Chemistry. The Cyclic Compounds. A continuation of Chemistry 35A but dealing with the aromatic hydrocarbons, their derivatives, and an introduction to heterocyclic compounds and dye chemistry. A discussion of carbohydrates is included. Three hours lecture. Fall semester. Three units.

35C. Methods of Organic Chemistry. An introduction and discussion of the common technics of organic chemistry. Experimental preparation and study of the common classes of organic compounds. Six hours laboratory. Fall semester.

Prerequisites: Chemistry 35A, 35B, Chemistry 1A, 1B. Two units.

54. Physical Chemistry. An elementary course reviewing those principles having important applications in the medical sciences. Intended for Pre-Medical students. Three hours lecture. Spring semester. Three units.

55. Physical Chemical Measurements. Exercises in the practice of physical chemical laboratory methods intended primarily for Pre-medical students. Should be taken concurrently with chemistry 54. Three hours laboratory. One unit.

101. Advanced Inorganic Chemistry. Discussion of the Basic Atomic Structure, Valence, Radioactivity, Isotopes and Periodic Law. Consideration of several typical families in relations to the Periodic law. Properties of less common elements, such as the rare earths and transuranium elements discussed. Two hours lecture. Two units.

110. Advanced Quantitative Analysis. Includes the principles and use of instruments in analysis. Electro-methods: potentiometric, conductometric and amperometric titrations, polarography, controlled cathode potential electrodeposition. pH by hydrogen, glass and anitmony eletcrodes. Photometric methods, colorimetry, nephelometry, spectrophotometry and emission spectography. One hour lecture; six hours laboratory. Three units.

Prerequisite: Chemistry 16.

116. Advanced Analytical Chemistry. An extension of Chemistry 16. Includes gravimetric and volumetric analysis, electrodeposition, use of organic reagents, extraction separations, and some instrumentation involving colorimetry and electrotitrations. Two hours lecture; six hours laboratory. Four units.

Prerequisite: Chemistry 16.

120. Glass Blowing. The student is introduced to the arts and practices of glass blowing, making joints, seals, etc. Three hours laboratory. One unit.

130. Organic Preparations. Continuation of Chemistry 35C. Emphasis on advanced organic preparations. Six hours laboratory. Two units

133. Indentification of Organic Compounds. A lecture and laboratory course dealing with the identification, classification and reactions of organic compounds. One hour lecture, six hours laboratory.

Prerequisites: Chemistry 35A, B, C, Chemistry 16. Three units.

135. Theories of Organic Chemistry. A comprehensive study of the structure of organic compounds, including an evaluation of the present theories considered from an analysis of resonant structures. Discussion of mechanics of classical rearrangements and tautomeric equilibria. Selected topics in infra red absorption, technique as applicable to determination of composition. Two hours lecture.

Prerequisites: Chemistry 35A, B, C. Two units

150A. Physical Chemistry. A general course, primarily for students making chemistry their major subject, covering the laws and theories of chemical systems as applied to their equilibrium and energy relationships. Three hours lecture.

Prerequisites: Chemistry 1A and 1B; Chemistry 16; Chemistry 35A and 35B; one year of college physics, and a working knowledge of calculus.

150B. Physical Chemistry. A continuation of Chemistry 150A. Credit in Chemistry 150A, together with satisfactory preparation in physics and calculus. Three hours lecture. Three units.

150C. Physical Chemical Measurements. Exercises in the practice of physical chemical laboratory methods. Six hours laboratory.

Prerequisites: Chemistry 150A and concurrently enrolled in Chemistry 150B. Two units.

160. Chemical Literature. A consideration of primary and secondary sources of scientific work, including foreign journals and publications, books and library facilities. Methods of compiling bibliographies. One hour lecture. One unit.

180. Methods of Research. Students majoring in chemistry are required to undertake work of research or other advanced laboratory work along lines not covered by the courses already listed, under the direction of any member of the teaching staff with whom arrangements are made. The results of this research are incorporated in their senior thesis. Two units.

GRADUATE COURSES

(Concerning conditions for admission to graduate courses, refer to the Announcements of the Graduate Division.)

201. Inorganic Chemistry. Oxidation-Reduction potentials of the elements; the stereochemistry of inorganic compounds, the mechanism of inorganic reactions; non-aquesous solutions and hydrides. Three lectures per week. Three units

202. Inorganic Preparations. A laboratory course designed to give the student experience in the more common experimental methods in synthetic inorganic chemistry. Laboratory, six hours per week. Two units

203. Advanced Inorganic Laboratory. An advanced laboratory in experimental inorganic chemistry; the Stock high vacuum method, nonaqueous solutions, methods of handling air sensitive compounds. Laboratory, nine hours per week. Three units.

210. Special Topics in Analytical Chemistry. A physico-chemical interpretation of analytical processes. A critical study of one or more titrimetric processes, preparation of sample for analysis, separation and methods of final estimation. Analysis of complex materials. Credit to be arranged.

230. Heterocyclic Organic Chemistry. An intensive study of the preparation and reactions of the five and six membered rings with one hetero atom. Brief introduction to other classes. Three hours lecture per week. Three units.

231. Quantitative Organic Analysis. The chemical analysis of organic compounds based on the reactions of functional groups. Physical methods of quantitative analysis and chemical separations of mixtures. Six hours laboratory. Two units.

232. Physical Organic Chemistry. Discussion of experimental evidence for reaction mechanisms and logical methods for formulating reaction mechanisms from experimental data. Three lectures per week. Three units.

250. Chemical Thermodynamics. Rigorous discussion of the laws of therodynamics. Ideal and non-ideal systems. Chemical potential. Introduction to statistical mechanics and the thermodynamics of surfaces, fields, and radiation. Comprehensive problems illustrating theory. Three hours lecture per week. Spring semester. Three units.

251. Structural Chemistry. Non-mathematical introduction to the ideas of quantum mechanics. Comparison of valence bonds and molecular orbital descriptions of very simple molecules. Interpretation of the structures of molecules and crystals in terms of bon type, ionic character, orbital hybridization resonance, bond lengths and ionic radii. Three lectures per week. Fall semester. Three units.

252. Quantum Mechanics. Brief discussion of old quantum theory Schrodinger wave equation with applications to particle in box, harmonic oscillator and hydrogen atom. Perturbation Theory. Variation method. Discussion of helium atom, hydrogen molecule ion, hydrogen molecule. Three hours lecture per week. Fall semester. Three units.

270. Seminar. Staff.

280. Research. Staff.

CIVIL ENGINEERING

Chairman of the Department
Edmund C. Flynn, B.S., M.S.

6A. Surveying. Theory, use and adjustment of tape, compass, level, transit and plane table. Land and city surveying. Topographic surveying and methods of computing areas. Field astronomy. Three hours lecture.

Prerequisite: Trigonometry. Three units.

8. Summer School of Surveying. Field and office work. Practical problems in highway, railway and topographic surveying. Four weeks immediately following the second semester of the sophomore year. Fee $50.00.

Prerequisites: C.E. 6A and C.E. 57. Four units.

15. Mechanics. (Statics of Rigid Bodies). Resultants of force systems. Equilibrium of force systems. Graphical and algebraic solutions of forces acting on trusses and other structures. Friction. Three hours lecture.

Prerequisite: Physics 8 Three units.

16. Mechanics. (Dynamic of Rigid Bodies). The motion of rigid bodies and the forces causing this motion are described mathematically. The concepts of linear and angular displacement, velocity and acceleration are extended to the general case of plane motion, including relative motion. Extensive application is made of Newton's Laws of motion including the Work-energy and Momentum-impulse Principles.
Prerequisite: C.E. 15. Three units.

57. Surveying Practice. Field methods in the use of the tape, compass, level and transit. Six hours field practice.
Prerequisite: To accompany C.E. 6A. Two units.

58. Surveying Practice. Practice in solar and stellar observations for the determination of azimuth, latitude, longitude and time. Three hours field practice.
Prerequisite. C.E. 57. One unit.

71A. Graphic Statics. Graphical solution of beam reactions and stresses in truss members. Three hours lecture and drawing.
Prerequisite: C.E. 15 or concurrent registration. One unit.

78. Geology. A study of the origin of the earth, the materials and rocks comprising the earth's crust, and the forces and processes acting to shape and modify the landscape and topography. Mineral and rock identification. The uses and applications of topographic and geologic maps. Two hours lecture.
Prerequisites: Chemistry 3A and 3B. Two units.

Open to students in all colleges. Registration in C.E. 177 Geology. Laboratory required only for Civil Engineering majors.

110. Hydraulics. Open channel flow, hydraulic machinery, dams, spillways, pipe networks, water hammer, hydrology, and stream flow. Two hours lecture and three hours calculation period.
Prerequisite: M.E. 121. Three units.

116. Mechanics of Materials. Mechanical properties of engineering materials. Theory on behavior of machine and structural members under load. Determination of stresses, deformations and deflections in machine and structural members under load. Design of machine and structural members.
Prerequisite: C.E. 15. Three units.

122B. Structures. Analytical study of framed trusses with fixed loads. The analysis of steel and timber beams, plate girders, steel roof trusses and industrial buildings. Three hours lecture.
Prerequisites: C.E. 16. Three units.

123A. Structures. Analysis of bridge trusses with dead, live, impact and lateral loads. Deflection of trusses and trusses with redundant members. Wind stress analysis of buildings. Continuous frames and secondary stresses. The moment distribution method of analysis. Three hours lecture.
Prerequisite: C.E. 122B. Three units.

124. Reinforced Concrete. Principles and practice of reinforced concrete as applied to beams, girders, floor slabs, columns and footings. Reinforced concrete structures. Three hours lecture.
Prerequisite: C.E. 123A. Three units.

127. Soil Mechanics. A study of the origin, composition, and characteristics of soils. Theoretical analysis of the physical properties of soil. Selected laboratory tests to evaluate physical and mechanical properties of soils for engineering uses. 3 hours lecture and 3 hours laboratory
Prerequisites: C.E. 16 and M.E. 121. Four units.

128. **Foundation Engineering.** The application of theoretical soil mechanics to engineering problems: selection of type of footings, pile foundations, cofferdams and caissons, settlement determinations, flexible and rigid pavement design. Three hours lecture.
Prerequisites: C.E. 127 and C.E. 123A. Three units.

131. **Sanitary Engineering.** Collection, purification and disposal of sewage. Sewage treatment works. A study of the source, quality and quantity of water necessary for a municipal supply. Works for the collection, purification and distribution of water. Three hours lecture.
Prerequisite: C.E. 116. Three units.

131A. **Sanitary Engineering.** Collection, treatment, and disposal of sewage and industrial wastes. Collection, purification, and distribution of municipal water supply. Standard practice in the common tests of sanitary and industrial wastes and polluted water. Two hours lecture.
Prerequisite: C.E. 110. Two units.

142. **Highway Engineering.** Design, construction and maintenance of roads and pavements. Two hours lecture.
Prerequisite: Senior standing. Two units.

142A. **Transportation Engineering.** Design, construction and maintenance of roads and pavements. Two hours lecture, three hours laboratory.
Prerequisites: C.E. 126A and C.E. 176. Three units.

159. **Curves and Earthwork Laboratory.** Field practice in laying out simple, compound, reverse and transition curves. Three hours field practice.
Prerequisite: To accompany C.E. 109. One unit.

161. **City and Regional Planning.** City and metropolitan planning theory and methods; the role of physical planning in local government; land use and zoning; population estimation; subdivision planning. The relationship of municipal engineering to city and regional planning. Three hours lecture and three hours laboratory.
Prerequisite: Junior standing. Four units.

162. **Street and Highway Planning.** Highway planning, finance, location, design, construction, and maintenance. An introduction to traffic engineering with special reference to city and regional planning. Three hours lecture.
Prerequisite: C.E. 161. Three units.

163. **Hydraulic and Sanitary Engineering.** Problems in land drainage, open channel flow, stream flow, pipe network systems and hydrology. Water quality and standards. Special problems in sewerage treatment and water treatment systems. Three hours lecture and three hours laboratory.
Prerequisites: C.E. 161 and M.E. 121. Four units.

164. **Traffic Engineering.** Street and highway traffic problems; principles of design for major streets on the basis of operational characteristics and land use planning, traffic regulations and control. Two hours lecture and three hours laboratory.
Prerequisite. C.E. 162. Three units.

CE 165. **Hydraulic Structures.** Practice and procedure in the hydraulic and structural design of flumes, inverted siphons, stilling basins, spillways, dams, large pipelines, and other selected hydraulic structures. Three hours lecture.
Prerequisites: C.E. 163 and C.E. 123A. Three units.

166. Materials Laboratory. Experimental determination of the mechanical properties of engineering materials in accordance with A.S.T.M. Standards. Experimental verification of theory presented in Mechanics of Materials course.
Prerequisite: To accompany C.E. 16. One unit.

170A. Thesis. The investigation of some engineering problem and the writing of an acceptable thesis. Conference as required.
Prerequisite: Senior standing. One unit.

170B. Thesis. Continuation of C.E. 170A.
Prerequisite: C.E. 170A. One unit.

170C. Thesis. Continuation of C.E. 170B.
Prerequisite: C.E. 170B One unit.

171A. Graphic Problems. Graphic Solutions of static problems. Three hours lecture and drafting.
Prerequisite: C.E. 15 or to accompany C.E. 15. One unit.

172. Structural Design. The design of the roof truss and the supporting columns of a steel mill building. Shop drawing of the structure. Six hours lecture, computation and drafting.
Prerequisite: To accompany C.E. 122B. Two units.

173A. Structural Design. Design of columns, beams and girders. Design of a railway plate girder. Three hours lecture, computation and drafting.
Prerequisite: To accompany C.E. 123A. One unit.

173B. Structural Design. Design of columns, beams and girders. Design of a railway plate girder. Six hours lecture, computation and drafting.
Prerequisite: To accompany C.E. 123A. Two units.

174B. Structural Design. Analysis and design of small steel or concrete building frame. Design of concrete retaining wall. Six hours lecture, computation and drafting.
Prerequisite: To accompany C.E. 124. Two units.

174D. Structural Design. Analysis and design of small steel or concrete building frame. Design of concrete retaining wall. Six hours lecture, computation and drafting.
Prerequisite: To accompany C.E. 124A. Two units.

176. Soil Mechanics Laboratory. Laboratory practice in the examination and testing of the physical properties of soils. Three hours laboratory.
Prerequisite: To accompany C.E. 126A. One unit.

177. Geology Laboratory. To accompany C.E. 78. Three hours laboratory. One unit.

181. Sanitary Laboratory. Standard practice in the common tests of sanitary and industrial wastes and polluted and contaminated waters. Three hours laboratory.
Prerequisite: To accompany C.E. 131A One unit.

192. Highway Laboratory. Standard methods of testing bituminous materials and the geometric design of highways. Three hours laboratory.
Prerequisite: To accompany C.E. 142A. One unit.

198. Seminar.
Prerequisite: Senior standing. One unit.

199. Individual Study. By special arrangement with the Chairman of the Department. Units: arranged

ECONOMICS

Chairman of the Department
John Pagani, B.S.C., Ph.D.

Students who wish to make Economics their major subject must complete in the lower division Economics 1A and 1B with an average grade of at least C. **This course is a prerequisite for all upper division courses in Economics.** Students who have not fulfilled this requirement must receive special permission from the Chairman of the Department of Economics.

The major program must include not less than 24 units of upper division work in Economics, including Economics 100, 110, 114, 116, and 122.

An average of C must be maintained in all courses of the major, and at the end of the senior year each student must be ready to pass a comprehensive final examination.

In addition to the units in Economics, a major in this field must include 6 units in each of two related social study fields. In each of these courses he may not present less than a grade of C.

Students in the College of Business Administration should consult the programs listed in the section on the College of Business Administration to determine their requirements.

Lower Division Courses

The following courses are open to students in all departments of the University, subject to the indicated prerequisite, if any.

1A-1B. Principles of Economics. The student is made acquainted with the general principles, terminology and methods of analysis essential to an understanding of economic processes and problems. The work of the course centers around the four dominant phases of economics: consumption, production, exchange and distribution. Three hours lecture. Two semesters. Six units.

Upper Division Courses

100. Principles of Statistical Method. The object of this course is twofold: Firstly, it presents the techniques of elementary statistical analysis as tools appropriate for the study of quantitative data. Secondly, it considers the logic of statistical induction and the inherent limitations imposed thereon by the nature of the data themselves. The subject matter includes averages, variation, elementary ideas of index numbers, simple linear correlation and elementary time series analysis. Three hours lecture, three hours laboratory. Four units.

101. Statistical Analysis. Application of the methods of basic least squares with particular reference to the problems of multiple, partial, and curvilinear correlation. Special attention will be given to certain techniques appropriate to the solution of correlations involving time series. Three hours lecture. First semester. Four units.
Prerequisite: Economics 100

102. Statistical Analysis. The principles of statistical inference will be considered together with the problems of small samples, tests of significance, statistical estimation, contingency tables, and analysis of variance and covariance. Three hours lecture. Second semester.
Prerequisite: Economics 101. Four units.

110. History of Economic Doctrines. A survey of economic theories and doctrines from Plato to the present. The various types of theory are contrasted and compared and their relationship to the general economic and social history of the period indicated. Three hours lecture.
Three units

114. Economic Theory. An analysis of cost and price relationships in the individual firm and in the industry of which it is a part. The three special cases of pure competition, monopolistic competition, and monopoly will be discussed. Three hours lecture. Three units.

115. Aggregate Economics *(National Income)*. An analysis of the level of national output and its determinants. Three hours lecture.
Three units.

116. American Economic History. A study of the economic history of the United States, with special reference to problems arising from the factory system and large scale production. Three hours lecture.
Three units.

117. European Economic History. A study of the development of the economic aspects of civilization in medieval and modern times. Special attention is given to the evolution of economic institutions and the historical background of the economic problems of the present. Three hours lecture. Three units.

118. Economic Geography. Includes the study of the physical aspects of the earth as a planet, and the varied environments which it provides for the habitat of man. Different human economics and their relationships to the principal natural environments comprise a large part of the course. In addition, the cultural aspects of some phases of human existence are included, such as political geographical settlements, urban life, etc. Three hours lecture. Three units.

120. Public Finance and Taxation. A course devoted to the analysis of public expenditures and public revenues. In the case of expenditures, particular emphasis will be placed on the change in the qualitative nature of those expenditures by government and the effects of such changes on the private economy. The section of the course devoted to public revenues will consider taxes peculiar to the United States in such a way as to determine the ultimate bearers of the burden of those taxes. Three hours lecture.
Three units.

121. Corporation Finance. An introduction to the problems surrounding the procurement of funds needed for carrying on a modern business enterprise. Topics covered will include: financial organization of modern industry; the instruments of enterprise finance; promotion and sale of securities; financing of operations of the going-concern; problems of financing growth and expansion; financial readjustments. Three hours lecture. Three units.

Prerequisites: B.A. 1A and B.A. 1B.

122. Money and Banking. An analysis of the fundamental concepts of money. The discussion of money will be followed by an analysis of commercial banking principles. Emphasis will be placed upon the commercial bank as a "manufacturer of the means of payment." The discussion of commercial banking will, of necessity, entail consideration of the philosophy, technique and policy of central banking. Mindful of the fact that the United States possesses a monetary and banking system peculiar to itself, consideration will be given to "money of the United States," the National Banking System and the Federal Reserve System, whenever possible or necessary. Three hours lecture. Three units.

124. Investments and Investment Institutions. As Corporation Finance deals with the problems of business management devising ways and means of procuring funds for enterprise operations, so this course will deal with the market for funds as viewed by those individuals and institutions who are offering those funds in that market. Therefore, among the subjects to be considered will be the nature of the money market; institutions operating therein; and because of the significance of the presence of government, government control thereof. It will be presumed that a student electing this course possesses a working knowledge of commercial and central bank operations and of the fundamentals of enterprise finance. Three hours lecture. Three units.

Prerequisites: B.A. 1A and B.A. 1B.

128. Business Cycles. An introduction to the analysis of fluctuations in the level of general business activity. Specific theoretical formulations explaining business cycles will be discussed. This will be followed by a discussion of the history of business fluctuations, the problem of control and the attainment of stability. Three hours lecture. Three units.

150. Labor Problems. Lectures and class discussion on (1) the problems: insecurity, wages and income, hours and work periods, sub-standard workers, industrial autocracy; and (2) attempts to solve them: by employees, by employers, by government. Three hours lecture. Three units.

158. Government and Business. This course deals with the general problem of government regulation of business as exercised especially by the Federal authority. It analyzes the regulation of Trusts and Business Combines; Business Practices; Production; Labor; Agriculture; Public Utilities, and the like. It investigates the government's regulatory machinery and enters into an analysis of methods whereby competition is either restricted or encouraged, and other government's economic objectives are achieved.

Three hours lecture. One semester. Three units.

180. International Trade. It is the purpose of this course to present the generally accepted results of the theoretical investigations of the past, and then to give the student the modern doctrine of the manner in which international adjustment to economic change occurs. The theories and operation of foreign exchange and its economic influence upon industry and trade will be considered in order that the student may be thoroughly acquainted with the analytical tools that are available for use in understanding the importance of government policy in international trade. Three hours lecture. Three units.

190. Research Technique. Supervised work for the senior thesis. One unit.

GRADUATE COURSES

The following courses will not be offered before September, 1959. (concerning conditions for admission to graduate courses, refer to the catalogue index, graduate division).

214A-214B. Seminar in Price Theory. Micro-economics: A study of demand, price, and distribution theory at an advanced level. Four units.

215. Seminar in Employment Theory. Micro-economics: A study of the determinants of the level of output at an advanced level. Two units.

222. Seminar in Monetary and Banking Theory. An analysis of monetary and banking theory and policy. Two units.

EDUCATION

Chairman of the Department
Edwin J. Brown, B.S., M.A., Ph.D.

A major in Education will not be offered during the academic year 1958-59. All courses, however, for the General Secondary Credential will be offered. For information regarding this program refer to the Index "Teacher Education Program."

A-B. Prescribed Physical Training. Freshmen who are physically fit and who are ineligible for ROTC (see page 52) are required to meet two periods a week for physical training. Two hours each semester. One unit.

C-D. Prescribed Physical Training. Sophomores who are physically fit and who are ineligible for ROTC (see page 52) are required to meet two periods a week for physical training. Two hours each semester. One unit.

1A-1B. Prescribed Physical Training. Participation in Physical Education under the direction of the Director of Athletics. Units and time to be determined by the Director with the approval of the Dean.

***110. Ratio Studiorum.** An examination of the principles, methods and practices observed in the schools of the Society of Jesus, as embodied in the Ratio Studiorum. Comparison of these with current educational theory and practice. Two hours. One semester. Two units.

111. Principles and History of Education. A survey of the theories and general principles of education affecting present day procedures. Historical background as it affects the dominant phases of modern education. Two hours. One semester. Two units.

112. Secondary Education and the Curriculum. The scope, function, curriculum, and organization of the American secondary school. Three hours. One semester. Three units.

113. Introduction to Educational Psychology. Investigation of the psychological problem involved in education together with the practical application of psychological principles. Special emphasis upon the nature of learning and the environmental influences upon learning and behavior. Three hours. One semester. Three units.

114. Methods, Management, and Observation. A basic course in classroom procedures in the secondary school; curriculum materials, methods and evaluation of instruction, public school visitation and observation in the fields of the teaching major and minor; classroom management problems; extra-curricular activities; organizations for pupils, etc. Lectures and assignments. Two hours. One semester. Two units.

115. Guidance, Tests and Measurements. Guidance and counselling in terms of the total school situation; principles and their applications to individuals and groups; standardized tests; test construction; practice in administering, scoring, and interpreting results for diagnosis and instruction improvement. Two hours. One semester. Two units.

116. Audio-Visual Aids. Experience in and discussion of the methods and the mechanics of presenting classroom work with the use of Audio-Visual aids. Two hours. One semester. Two units.

117. Psychology of Adolescence. The important physical, mental, and moral changes occuring during the adolescent period. A study of the

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development of the attitudes, interests, problems and adjustments of the teen age. A foundation for the proper evaluation of adolescent mental life and instruction. Two hours. One semester. Two units.

118. Growth and Development. A consideration of the processes through which the normal human being reaches maturity, acquires effective use of his bodily equipment and learning capacity and makes satisfactory personal and social adjustments. Two hours. One semester. Two units.

120. Introduction to Tests and Measurements. The purpose of measurement in Education; standardized tests of intelligence and achievement. Other means of evaluating learning. Two hours. One semester. Two units.

126. Principles and Practice of Guidance. A basic course covering philosophies of guidance; psychological and sociological factors involved in vocational, educational, social, health and recreational guidance. Sources and methods of using guidance materials and information. Two hours. One semester. Two units.

GRADUATE COURSES

(Concerning conditions for admission to graduate courses, refer to the catalogue index, Teacher Education Program).

201. Public Education in the United States. A study of the organization, control, program, and financing of public education in the United States, with special emphasis upon current issues in the field of public education. Three hours. One semester. Three units.

202. Professional Methods. (Seminar) A special methods course in the subject or field directly relating to the teaching major or minor, or both. Planned to be taken concurrently with Education 320. Three hours. One semester. Three units.

255. Guidance and Counselling in the High School. Organized to supplement Course 115. Uses problems in the organization and administration of both group and individual guidance and counselling in the secondary school. Three hours. One semester. Three units.

260. Introduction to Educational Statistics. Supplements the measuring phases of Course 115. Arranging, displaying, and interpreting statistical data; treating of such concepts as central tendency, distribution, variability, prediction, probability, correlation, index numbers, and series. Three hours. One semester. Three units.

270. Educational and Vocational Guidance. The study of various sources of occupational information; the problems of collecting and filing printed materials; methods of disseminating such information. Three hours. One semester. Three units.

Prerequisite: Education 115.

275. Historical and Philosophical Backgrounds of Education. Offered as a seminar. Comparative philosophies of education in their historical backgrounds. May be taken only by students working toward the advanced degree. Three hours. One semester. Three units.

280. The Teacher and School Administration. A study of the role of the classroom teacher in school administration. Principles, procedures, and trends that reflect teacher participation in democratic school administration provide the chief basis for class activity. Specific practices of the responsibilities and contributions to school adminstraton are emphasized. Three hours. One semester. Three units.

320A. Directed Teaching. Participation and practice under supervision in conducting classes in public high schools. Conferences with supervising instructors and with the Director of Teacher Education. One semester. Three units.

Prerequisites: Graduate standing and Education 202 and 114.

320B. Directed Teaching. Participation and practice under supervision in conducting classes in public high schools. Conferences with supervising instructors and with the Director of Teacher Education. One semester. Three units.

Prerequisites: Graduate standing and Education 202 and 114.

ELECTRICAL ENGINEERING

Chairman of the Department
Henry P. Nettesheim, B.S., M.S.

125. Fundamentals of Electric and Magnetic Circuits. A basic treatment of the fundamental engineering relationships applying to electric, magnetic and dielectric circuits. Emphasis is placed upon the effect of electric circuit parameters in both direct current and single phase alternating current circuits. Basic concepts of magnetic forces, magnetically induced voltages, electric fields, and direct current transients are examined. Three hours lecture, three hours laboratory.

Prerequisites: Physics 9 and concurrent or prior registration in Mathematics 4A. Four units.

126. Fundemental Electric Circuits and Machines. Continuation of E.E. 125 of the electric circuit fundamentals as applied to polyphase circuits, both balanced and unbalanced. The effects of non-sinusoidal waveforms are examined analytically and graphically. The basic concepts of electro-mechanical energy conversion apparatus are examined in the study of direct current and alternating current rotating machinery. The theory of single phase transformers including use in polyphase connections is studied. Three hours lecture, three hours laboratory.

Prerequisite: E.E. 125. Four units.

127. Intermediate Electric Machines. An extension of the machines theory started in E.E. 126, to include more detailed examination of the basic types of a-c and d-c machines. In addition the basic characteristics of metadynes are examined. The transient performance of all machines is covered briefly. Loading effects on polyphase transformers are examined. Three hours lecture, three hours laboratory.

Prerequisite: E.E. 126. Four units.

128. Advanced Electric Machines. A study of machines particularly applicable to control systems. The analysis of metadyne characteristics, magnetic amplifiers, and translational electro-mechanical devices, is covered extensively. Three hours lecture, three hours laboratory.

Prerequisite: E.E. 127. Four units.

135. Elements of Electrical Engineering. A course for Civil Engineering students dealing with the principles and applications of alternating and direct current circuits and machines. Three hours lecture, three hours laboratory.

Prerequisites: Physics 9 and concurrent or prior registration in Mathematics 4A. Four units.

136. Introductory Electronics. Elements of vacuum and gas tube theory, and applications to basic electronic circuits in particular as they

apply to industrial electronics. Three hours lecture, three hours laboratory.
Prerequisites: E.E. 125 or E.E. 135, Physics 10. Four units.

138. Intermediate Circuits. Network theorems, analytical treatment of the theory of coupled circuits, and impedance transforming networks. Transient analysis of simple and complex linear circuits by solution of the applicable differential equations by classical methods and by the use of the Laplace Transform method. Three hours lecture.
Prerequisites: E.E. 126, Mathematics 119. Three units.

139. Intermediate Electronics. Elements of electron ballistics, emission theory, and transistors. Extension of the study of electronic amplifiers to include wide band and radio frequency amplifiers, and the principles and applications of feedback. Includes a study of polyphase rectifiers and regulated power supplies. Three hours lecture, three hours laboratory.
Prerequisites: E.E. 136, E.E. 138. Four units.

140. Advanced Electronics. Continuation of E.E. 139 to develop features of oscillators, modulators, and detectors. Study of amplitude modulation, frequency modulation, and pulse modulation systems. Introduces ultra-high frequency techniques and related circuits. Three hours lecture, three hours laboratory.
Prerequisite: E.E. 139. Four units.

142. Electrical Illumination. Spectral characteristics of the common types of electrical light sources are discussed and specification bases established. Problems are solved for the selection and position of lighting systems to provide specified levels of illumination. Wiring and control systems are developed for handling the electric lighting power in conformity with Underwriters' Laboratories code. Two hours lecture.
Prerequisite: E.E. 125 or E.E. 135. Two units.

144. Power Transmission Lines. The behavior of relatively long lines at power frequencies is analyzed. Power transmission limitations and circle diagrams are developed. Effects of power factor correction equipment on current and voltage distribution are treated. The characteristics of these lines that must be considered in carrier current communications and relaying systems are discussed. Two hours lecture.
Prerequisite: E.E. 127. Two units.

152. Advanced Circuits. Study of communications filter networks, transmission lines, elementary antennas and the theory of radio propagation. Three hours lecture.
Prerequisite: E.E. 138. Three units.

160. Feedback Control Systems. The analysis of feedback control systems, including the use of their transient and frequency response. Methods of analysis, as shown by Routh's and Nyquist's criteria, logarithmic, rott locus and graphical methods, are developed. Design considerations of simple linear systems plus compensations of such systems are briefly outlined. The mathematical background of the analytical tools is carefully developed. Three hours lecture, three hours laboratory.
Prerequisites: E.E. 126, E.E. 136, and E.E. 138 or M.E. 143.
Four units.

162. Electrical Design. Design of magnetic circuits and associated electric circuits in machines. Design of basic electronic devices. Calculations of heat generation and dissipation rates in electrical apparatus. Selection of materials for desired electric, magnetic, dielectric, and thermal behavior. Three hours lecture. Three units.
Prerequisites: E.E. 127, E.E. 139, M.E. 141, C.E. 16, C.E. 115.

164. Power Systems Studies. The study of the effects of faults on power systems, by the use of symmetrical components, are examined. The derivations of the impedances to positive, negative, and zero sequence currents for various circuit elements are developed. The problem of system stability under various conditions of operation is studied. Three hours lecture.

Prerequisites: E.E. 127, E.E. 138. Three units.

170A. Thesis. Investigation of an approved Electrical Enginneering problem and preparation of suitable thesis covering the investigation. Conferences as required.

Prerequisite: Senior standing in Electrical Engineering. One unit.

170B. Thesis. Continuation of E.E. 170A.

Prerequisite: E.E. 170A. One unit.

170C. Thesis. Combination of E.E. 170A and E.E. 170B.

Prerequisite. Senior standing in Electrical Engineering. Two units.

172. Power Generation and Distribution Problems. Principles of engineering economy applied to selection of component equipment for power operation and utilization. Survey of typical capital and operating costs of steam and hydro-electric generating stations. Economic selection of conductor size. Division of load between available generating units and between available services. Location of load centers, power plant sites. Simple short circuit calculations on systems and applications of circuit breakers and relays for system protection. Two hours lecture.

Prerequisite: E.E. 126. Two units.

198. Seminar. Prerequisite: Senior standing. One unit.

199. Individual Study. By special arrangement with the Chairman of the Department. Units: Arranged.

ENGLISH

Chairman of the Department
James E. Wade, A.B., M.A., Ph.D.

Students who wish to make English their major subject must complete English 1A-1B, 46A-46B, 48 and 49 with at least a grade of C.

The major program must also include 24 units of upper division English courses. English 103 and 105 are required, and two of the following: English 113, 114, 115, 116 and 122. English majors planning graduate work or teaching as a profession should inform their English adviser early in their course. An average grade of C must be maintained in all courses of the major, and, at the end of the senior year, each student must pass a comprehensive final examination.

The Master's Degree — See the **Announcement of the Graduate Division.**

For the Teaching Major. Refer to index "Teacher Education Program".

Subject A. A remedial course for those who fail composition placement tests. The course is given concurrently with English 1A-1B, two hours until the course is passed. Successful completion of the Subject A requirement is prerequisite to graduation, therefore, regular attendance and faithfulness in doing assignments are necessary. No credit.

1A-1B. First Year Composition and Literature. Instruction and practice in good expository, narrative, descriptive, and argumentative writing, together with readings and analysis of these types of literature.

Expository writing is stressed in the first semester, together with academic form and the use of the university library. Three hours. Two semesters. Six units.

46A-46B. Survey of English Literature. History of the literature and readings: A. From the beginnings to the decline of Neo-Classicism; B. From the pre-Romantic period to the present. Three hours. Two semesters. Six units.

48. Advanced Composition and Literature: Prose. A continuation of English 1A-1B, but with emphasis on persuasive and critical writing and on emotion and imagination in literature. Two hours. One semester. Two units.

49. Advanced Composition and Literature: Poetry. A study of lyric, narrative, and dramatic poetry, which includes practice in the composition of verse and in critical analysis of poems. Two hours. One semester. Two units.

51. Advanced Composition and Literature. Advanced study of the principles of good writing, with emphasis on argumentation and persuasion, integrated with the study of prose, poetry and drama. This course is offered primarily to students in the College of Business Administration. Three hours. One semester. Three units.

53A-53B. Journalism. Instruction and laboratory work in managing, editing and writing for journals or newspapers. Two hours lecture. Two semesters. Two units.

54A. Journalism Workshop. Continuation of 53A-53B. Practice and laboratory work in conjunction with publication of the student newspaper, The Santa Clara, a prerequisite. Units by arrangement.

103. Shakespeare. An intensive study of selected plays, with other plays assigned for more rapid reading, and an introduction to Shakespearean criticism and scholarship. (Required of all English majors.) Three hours. One semester. Three units

104. Milton. His background and spirit. Contrast with Dante, Virgil and Homer. Selection from his prose. His principal minor poems. Comus. Paradise Lost. Three hours. One semester. Three units.

105. Chaucer. A study of Chaucer's life and writings which includes reading, in the Middle English language, of selections from the Canterbury Tales and other poems. Three hours. One semester. Three units.

106. Literary Criticism. Representative critical theories from Plato to the present, and their application to specific literary works. Three hours. One semester. Three units.

107. Comparative Literature. Reading of ancient, mediaeval, and modern classics in English translations. Lectures on the authors and masterpieces of various nations and periods of history, emphasizing their relations to English and American literature. Three hours. One semester. Three units.

108A-108B. American Literature. A study of the literature of the United States: (a) from the beginning to 1860; (b) from 1860 to the present. Three hours. Two semesters. Six units.

109. Browning. Dramatic lyrics; dramatic romances; the dramatic monologue; Pippa Passes; The Ring and the Book. Three hours lecture. One semester. Three units.

110. Shakespeare. An extensive reading course in the plays of Shakespeare. A rapid survey of the poet's dramatic work. (For students not majoring in English.) Lectures and assigned readings. Three units.

112. The English Drama. A survey of the English drama from the liturgical period to the end of the Victorian period. Three hours. One semester. Three units.

113. The Renaissance Period. A study of the literature of the English Renaissance (1485-1660). Three hours. One semester. Three units.

114. The Neo-Classical Period. A study of neo-classical and pre-romantic literature in England (1660-1798). Three hours. One semester. Three units.

115. The Romantic Period. A study of the literature of England during the Age of Romanticism (1798-1832). Three hours. One semester. Three units.

116. The Victorian Period.. A study of the literature of the Victorian Age (1832-1901). Three hours. One semester. Three units.

***117. Creative Writing.** A workshop course in the technique of writing current types of imaginative prose. Three hours. One semester. Three units.

***118. Oratory.** Principles of oratorical art; reading and analysis of great speeches of Western Literature; consideration of the problems and practice of modern oratory; exercises in composition. Three hours. One semester. Three units.

119. Modern English Literature. A study of the literature of England since the Victorian Age. Three hours. One semester. Three units.

120. The Novel. A critical and historical study of the British and American novel. Three hours. One semester. Three units.

121. The Short Story. A critical and historical study of the short story, supplemented by story-writing assignments. Three hours. One semester. Three units.

122. The Medieval Period. A study of the English language and literature before 1485 A.D. Three hours. One semester. Three units.

130. Survey of the Drama. Designed primarily for students of English literature to supplement their knowledge in the field of drama. It will cover representative plays from the Greeks to the present-day playwrights—the Continent, England and America. It is intended to familarize the student with the principal dramatic forms, the development of dramatic art, and masterpieces of the theatre from various periods and countries. Three hours. Fall semester. Offered in alternate years. Three units.

135. Playwriting. The critical analysis of dramatic structure and techniques designed for the student interested in dramatic literature, play directing, or the writing of original plays for stage, radio, or television. Two hours. Spring semester. Offered in alternate years.
Prerequisite: English 130. Two units.

190. Research Techniques. Supervised work for the senior thesis. One unit.

GRADUATE COURSES

(Concerning conditions for admission to graduate courses, refer to the Announcements of the Graduate Division.)

200. Introduction to the Graduate Study of English. A study of the methods and materials of literary research at the graduate level. Three hours. One semester. Three units.

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201. History of the English Language. A study of the origins of the English language and its development in Great Britain and the United States of America. Three hours. One semester. Three units.

202. Old English. A study of the language and literature of the Old English Period (c. 449 A.D. - 1100 A.D.). Three hours. One semester. Three units.

203. English Grammar and Linguistics. An historical survey of the traditional parts of speech and snytax, along with a consideration of the contemporary leaders in the "new linguistic" movement in English grammar. Student papers and reports. Three hours. One semester. Three units.

204. Middle English. A study of the English language, its dialects and literature in the period 1100 A.D. - 1500 A.D. Three hours. One semester. Three units.

205A-205B. Studies in Chaucer. An intensive study — with special attention to language, versification, literary characteristics and historical background — of the *Canterbury Tales* or *Troilus and Criseyde,* in alternate semesters. Student papers and reports. Three hours. Two semesters. Six units.

208A-208B. Seminar in American Literature. Research into the more significant works of major figures, with special attention to historical background. Three hours. Two semesters. Six units.

210. Seminar in Renaissance Drama. Research into the background and development of selected representative plays. Three hours. One semester. Three units.

213A-213B. Seminar in Renaissance Literature. Sturdy and research into the more significant works, with special attention to literary characteristics and historical background. Three hours. Two semesters. Six units.

216A-216B. Seminar in Victorian Literature. Study of and research into selected works of Victorian and later English writers. Three hours. Two semesters. Six units.

220. Seminar in American Literature. Directed research on specific projects. Three hours. One semester. Three units.

290. Directed Research. One to Six units.

FRENCH

See Division of Foreign Languages

GENERAL ENGINEERING

The following General Engineering courses will not be offered after the academic year, 1957-58.

1. Engineering Drawing. Lettering. Use of instruments. Orthographic projection. Isometric drawing. Oblique drawings. Single auxiliary views. Sections and conventions. Fasteners. Dimensioning. A.S.A. Drafting room standards. Six hours lecture and drafting. Two units.

2. Engineering Drawing. Theory of projection. Auxiliary views. Revolution. Point, line and plane problems. Development of surfaces. Intersections. Dimensioning and working drawings. Lettering. Drafting room standards. Six hours lecture and drafting.

Prerequisite: G.E. 1. Two units.

7. Orientation. Lectures and assigned reading on How to Study, Definitions of engineering, kinds of engineering, biographies, slide rule and problems. One hour lecture. One unit.

15. Mechanics. (Statics of Rigid Bodies). Resultants of force systems. Equilibrium of force systems. Graphical and algebraic solutions of forces acting on trusses and other structures. Friction. Three hours lecture.

Prerequisite: To accompany Math. 4A. Three units.

16. Mechanics of Materials. Mechanical properties of engineering materials. Theory on behavior of machine and structural members under load. Determination of stresses, deformations and deflections in machine and structural members under load. Design of machine and structural members.

Prerequisite: G.E. 15. Four units.

66. Materials Laboratory. Experimental determination of the mechanical properties of engineering materials in accordance with A.S.T.M. Standards. Experimental verification of theory presented in Mechanics of Materials course.

Prerequisite: To accompany G.E. 16. One unit.

108. Seminar. Reading and reports from current Engineering literature. Effective delivery of reports. One hour lecture and reports. Second semester.

Prerequisite: Senior standing. One unit.

115. Mechanics. (Dynamics of Rigid Bodies). The motion of rigid bodies and the forces causing this motion are described mathematically. The concepts of linear and angular displacement, velocity and acceleration are extended to the general case of plane motion, including relative motion. Extensive application is made of Newton's Laws of motion including the Work-energy and Momentum-impulse Principles.

Prerequisite: G.E. 15. Three units.

116. Mechanics. (Mechanics of Fluids). Properties of Fluids. Fluid statics. Kinematics of Fluid Flow. The Energy Equation for Steady Flow. Dimensional Analysis. Flow of Fluids in Pipes. Momentum, Lift and Drag coefficients. Compressible Gas Dynamics. Open Channel flow. Hydraulic Machinery. Two hours lecture.

Prerequisite: G.E. 115. Two units.

117. Materials and Processes. The manufacture, properties and use of modern materials of engineering. Two hours lecture. Two units.

121. Engineering Economics. Definition of economics. Basic concepts. Business units. Money and money systems. Investments. Labor relations. The economics of collectivism. Engineering economy studies. Present worth. Capitalized cost. Depreciation. Engineering reports and budgets. Contracts and specifications. Three hours lecture.

Three units.

122. Engineering Economics. Continuation of G.E. 121. Three hours lecture.

Prerequisite: G.E. 121. Three units.

126. Engineering Review. Review of the fundamental concepts and laws of mathematics and of the engineering sciences with practice in their application. Three hours lecture and computation. Second semester.

Prerequisite: Senior standing. One unit.

150. Advanced Merchants of Materials. The analysis of stresses, strains, and deflections in structures and machines. Limitations of the

analyses used in elementary strength of materials. Selected topics in the theory of beams, plates and shells, rotating disks, torsion, and buckling. Three hours lecture. Three units.

Prerequisites: G.E. 16 and Math. 121.

160. Advanced Fluid Mechanics. Application of the principles of thermo-fluid mechanics is made to selected topics in the theory of the boundary layer, compressible flow, aerodynamics, fluid machinery, and lubrication. Three hours lecture.

Prerequisite: M.E. 12 or M.E. 123 or concurrent registration. Three units.

166. Fluids Laboratory. Experimental study of the pressure, flow and energy of fluids. Laboratory techniques in the use of orifice meters, Venturi meters, and other metering devices. Three hours laboratory.

Prerequisite: To accompany G.E. 116. One unit.

GEOLOGY

1. General Geology. A popular course of visual instruction to give the student an intelligent appreciation of the physiographic relief features of the earth and an insight into the probable conditions of the origin and formation of various geologic phenomena. Lectures, sterepticon projections, and supervised discussion. Two hours. Two units.

2. Historical Geology. Visual instruction regarding theories of earth formation, Paleontology. Special study of fossils with access to large museum. Lectures on geologic aspects of evolution. Two hours. Two units.

34. Mineralogy. A course in Mineralogy with access to a large collection of specimens. Determination of unlabeled specimens. Crystallography. Blowpipe analysis. Includes a short course in Metallurgy. Iron ores and production of iron and steel. Percentage and effect of sulphur, silicon manganese and carbon in iron and steel. Coals, coke, carbons and ash. Two hours lecture.

Prerequisite: Geology 1. Two units.

101. Engineering Geology. The study of geology as it applies to the engineer in preliminary and exploration work for foundations of dams, bridges and buildings. Materials suitable for engineering structures. Erosion and silting of surface waters. Structural features of the earth's crust. Laboratory work with the common minerals and rocks of concern to the engineer, also their identification. Two hours lecture, three hours laboratory. Three units.

DIVISION OF FOREIGN LANGUAGES

Victor B. Vari, A.B., M.A.
Chairman of the Division

DEPARTMENT OF MODERN FOREIGN LANGUAGES

A major is offered in French or Spanish. To be admitted to upper division work, the candidate majoring in French or Spanish must have completed the first two-year courses or their equivalent in the language of his choice with at least an average grade of C. The candidate must complete a minimum of 24 units of upper division work in the language of his choice with at least an average grade of C.

Language Laboratory

During the first year of French, German and Spanish, students are required to listen to tapes on the assigned lesson for at least one hour a week. This is supplementary to the required three hours of classroom

work. This laboratory hour is considered an integral part of the course and absence from this hour is equivalent to a regular class absence. Thus a failure to comply with this requirement invokes the University regulations on class absences.

European Literature in Translation

In addition to courses given in the foreign languages, the Division of Modern Languages offers a survey course in Continental European Literature in English translation. This is an upper division course for which there are no foreign language prerequisites.

FL 111. Survey of European Literature I. This course covers the classics of French, German, Italian and Spanish literatures of the Middle Ages and Renaissance in English translation. The principal works of this period are read and discussed. Lectures cover the culture and thought of the Middle Ages and the Renaissance. Three hours. Fall semester. Three units.

FL 112. Survey of European Literature II. This course covers the literature from the 18th century to the present day. Lectures and reading treat the classical, neo-classical, romantic and realism movements from the 18th century to the 20th century. Three hours. Spring semester. Three units.

FRENCH

Students who wish to make French their major subject are urged to complete all lower division requirements while in lower division. They must present a C average in all prerequisites, including French 100A and 100B.

The major program must include 24 units of upper division work. An average grade of C must be maintained in all courses of the major and at the end of the senior year each student must pass a comprehensive final examination.

1. Elementary French. In this course the student is carefully drilled in elementary grammar up to the irregular verbs, attention also being given to acquiring a vocabulary of the more common words. Three hours. Fall semester. Three units

2. Elementary French. A continuation of French 1. Special attention is given to the more important irregular verbs, the memorizing of words, and translation of French into English and vice versa. Three hours. Spring semester. Three units.

A. A review course in French grammar and syntax open to transfer and high school students who fail to pass the French placement test, and/or students who have obtained a D grade in their language course. This course is given concurrently with French 3 and 4. Two hours until the course is satisfactorily passed. No grade. All transfer students who wish to qualify for Intermediate French (French 3 and 4) must take a placement test.

3. Intermediate French. A thorough review of grammar and syntax. The object of this course is to acquaint the student with the general vocabulary and enable him to read the more simple French writers. Conversation is developed. Three hours. Fall semester.

Prerequisite: French 2. Three units.

4. Intermediate French. This course continues the work begun in French 3. Regular exercises are given in written work, and copious reading is made from the standard works in order to fit the student for professional reading. Conversation is stressed. Three hours. Spring semester. Three units.

100A-100B. Advanced Composition and Reading. Compositions and sight reading; oral and written reports in French; conversation; survey of French literature. This course is conducted almost entirely in French. Three hours. Both semesters. Six units.

101-102. Survey of French Literature.

I—The Middle Ages, the Renaissance, the Seventeenth Century.

II—The Eighteenth, Nineteenth, and Twentieth Centuries. Three hours. Both semesters. Six units.

103-104. Intensive Reading, Grammar and Composition. Introduction to the stylistic elements of French, further training in pronunciation, and practice in oral and written French. Three hours. Both semesters. Six units.

107-108. The Seventeenth Century. The classical ideal. The study of Human nature, reason, and will in the literature of the seventeenth century. Three hours. Both semesters. Six units.

113-114. The Eighteenth Century. Readings of the outstanding works and thought of the period (1680-1789). Discussion and papers. Three hours. Both semesters. Six units.

115-116. The Nineteenth Century. Lyric poetry, short story, literary criticism, social movements and philosophy of the period. Three hours. Both semesters. Six units.

119-120. Contemporary French Literature. The French novel, essay and poetry since 1885. Three hours. Both semesters. Six units

GERMAN

1-2. First-Year German. The chief aim of this course is a reading knowledge of German. Three hours. Both semesters. Six units.

3-4. Second-year German. A continuation of German 1-2. Reading of advanced material and composition exercises. Three hours. Both semesters. Six units.

12-13. Scientific German. Reading of advanced scientific texts. Three hours. Both semesters. Six units.

Prerequisite: One year of German.

100A-100B. Third-Year German. Intensive reading, Grammar and Composition. This course is conducted almost entirely in German. Three hours. Both semesters. Six units.

101-102. Survey of German Literature.

I. From the beginning to the end of the seventeenth century.

II. Readings and lectures in German literature of the 18th, 19th and 20th centuries. Three hours. Both semesters. Six units.

ITALIAN

1. Elementary Italian. Elements of Italian Grammar. Drill in Pronunciation. Vocabulary. Three hours. Fall semester. Three units.

2. Elementary Italian. A continuation of Italian 1. Syntax; oral and written exercises. Reading from simpler Italian prose. Three hours. Spring semester. Three units.

A. A review course in Italian grammar and syntax open to transfer and high school students who fail to pass the Italian placement test, and/or students who have obtained a D grade in their language course. This course is given concurrently with Italian 3 and 4. Two hours until the course is satisfactorily passed. No grade. All transfer students who wish to qualify for Intermediate Italian (Italian 3 and 4) must take a placement test.

3. **Intermediate Italian.** Review of grammar and syntax. Translation. Oral and written exercises. Reading of somewhat difficult Italian prose. Three hours. Fall semester.
Prerequisite: Italian 2. Three units.

4. **Intermediate Italian.** Reading, written and oral exercises. This course aims at preparing the student to read the more difficult Italian writers. Three hours. Spring semester.
Prerequisite: Italian 3. Three units.

100A-100B. Italian Literature. A study of special periods and writers in Italian Literature with emphasis on their literary qualities. The development of fluency in Italian composition and pronunciation. An easy reading, writing and conversational knowledge of Italian is presumed. Three hours. Both semesters.
Prerequisite: Italian 4. Six units.

101. **A Survey of Italian Culture and Civilization.** Cultural, historical, literary, and artistic background of Italy from the origin to the "seicento"; special stress will be placed on the Rinascimento. Fall semester. Three units.

102. **A Survey of Italian Culture and Civilization** (continued). Lectures and commentaries, mostly in Italian, from the "seicento" to the present time. Spring semester. Three units

SPANISH

Students who wish to make Spanish their major subject are strongly urged to complete all lower division requirements while in the lower division. They must present a C average in all prerequisite courses including Spanish 100A and 100B.

The major program must include 24 units of upper division work in Spanish, at least one year of college Latin or equivalent (two years High School Latin), FL 111-112 and History 161A and 161B, History of the Americas. An average grade of C must be maintained in all courses of the major, and, at the end of the senior year, each student must pass a comprehensive final examination.

1. **Elementary Spanish.** Elements of Spanish grammar. Drill in pronunciation. Vocabulary. No credit allowed to students who have completed two years of high school Spanish. Three hours. Fall semester. Three units.

2. **Elementary Spanish.** A continuation of Spanish 1. Syntax; oral and written exercises. Reading from the simpler Spanish prose. No credit allowed to students who have completed two years of high school Spanish. Three hours. Spring semester. Three units.

A. A review course in Spanish grammar and syntax open to transfer and high school students who fail to pass the Spanish placement test, and/or students who have obtained a D grade in their language course. This course is given concurrently with Spanish 3 and 4. Two hours until the course is satisfactorily passed. No grade. All transfer students who wish to qualify for intermediate Spanish (Spanish 3 and 4) must take a placement test.

3. **Intermediate Spanish.** Review of grammar and syntax. Oral and written exercises. Reading of somewhat difficult Spanish prose. Three hours. Fall semester.
Prerequisite: Spanish 2 or qualifying examination. (See above, Spanish A.) Three units.

4. Intermediate Spanish. Reading, written and oral exercises. This course aims at preparing the student to read the more difficult Spanish writers. Three hours. Spring semester.
Prerequisite: Spanish 3. Three units

100A-100B. Spanish Composition and Reading. Composition, sight reading, oral and written reports in Spanish. Three hours. Both semesters.
Prerequisite: Spanish 4 or equivalent. Six units.

101. Survey of Spanish Literature. Survey of literature from its origin to the "Siglo de Oro". Study of representative works in the field of the novel, the drama and poetry of the period. Three hours. Fall semester. Three units.

102. Survey of Spanish Literature. (Continued). Lectures and commentaries, mostly in Spanish, on the literature of Spain from the period of decadence to the XX century. Reading and discussion of representative works which illustrate literary trends from the XVIII century to the Modernista movement. Spring semester. Three hours. Three units.

103. Cervantes. Study and interpretation of "Don Quijote" and Cervantes' other great works. Three hours. Fall semester.
Prerequisite: Sp. 102 or equivalent. Three units.

104. Modern Spanish Prose. Reading interpretation and discussion of significant works by Alarcon, Valdes, Galdos, Valera, Ibanez and other outstanding writers of this period. Three hours. Spring semester. Three units.

105. Advanced Composition and Conversation. Consult Head of Department. Three hours. Fall semester.
Prerequisite: any upper division course. Three units.

106. Commercial Spanish. A study of commercial correspondence. Introduction to vocabulary and forms used by commercial institutions. Consult Head of Department. Three hours. Spring semester.
Prerequisite: Spanish 105 or equivalent. Three units.

107. Masterpieces of Spanish Literature of the "Siglo de Oro". Reading and interpretation of representative Spanish texts. Three hours. Fall semester.
Prerequisite: Spanish 106 or equivalent. Three units.

108. Masterpieces of Modern Spanish Literature. Study and reading of selected modern plays and novels typical of Spanish life, culture and thought. Three hours. Spring semester.
Prerequisite: Sp. 107 or equivalent. Three units.

190. Research Techniques. Supervised work for the senior thesis. One unit.

DEPARTMENT OF CLASSICAL LANGUAGES

GREEK

1. Elementary Greek. Inflections, word formation, and syntax. Complementary exercises in composition. Three hours. One semester. Three units.

2. Elementary Greek. A continuation of Greek 1. Selected reading. Complementary exercises in composition. Three hours. One semester. Three units.

*3. **Greek Prose.** Select reading from Lysias and Isocrates. Complementary exercises in composition. Three hours. One semester. Three units.

5. **Demosthenes.** Selected reading. Three hours. One semester. Three units.

7. **A Study of Selected Greek Lyrics.** Three hours. One semester. Three units.

9. **Plato.** Selected readings. Three hours. One semester. Three units.

11. **Homer.** Selected reading from the Iliad and/or Odyssey. Three hours. One semester. Three units.

*12. **Sophocles.** One play. Three hours. One semester. Three units.

*13. **Biblical Greek.** Selected reading from the New Testament. Three hours. One semester. Three units.

*14. **Patristic Prose.** Selected reading from St. John Chrysostom and St. Basil. Three hours. One semester. Three units.

19. **Special Reading Course.** May be repeated for credit. Units by arrangement.

20. **Homer, Illiad.** Rapid reading of the entire work, together with a study of Homer's poetic art and of the life and civilization of the Bronze Age. Normally 20 and 21 will be given in the same year. Three hours. One semester. Three units.

21. **Homer, Odessy.** Rapid reading of the entire work. See Greek 20 above. Three hours. One semester. Three units.

*101. **Survey of Greek Literature.** Epic, lyric, drama and prose. Lectures, with selected reading. Three hours. One semester. Three units.

101T. **Survey of Greek Literature.** Same as preceding. All readings, however, in translation. Two hours. One semester. Two units.

*102. **Greek Historians.** Herodotus and Thucydides (selections). Three hours. One semester. Three units.

*103. **Greek Drama.** Sophocles; Antigone or Oedipus Tyrannus; one play of Aeschylus, Euripides or Aristophanes. Three hours. One semester. Three units.

*108. **Greek Oratory.** Demosthenes: Olynthiacs. Philippics and Crown Speech (selections). Three hours. One semester. Three units.

109. **Pindar.** Odes. Three hours. One semester. Three units.

*110. **Greek Composition.** Exercises in connected discourse, based on Demosthenes and/or Plato. Two hours. One semester. Two units.

*111. **Special Reading Course.** Units by arrangement.

LATIN

1-2. **Elementary Latin.** Beginning Latin courses for students who have had no previous study in Latin. These courses are equivalent to the first two years of high school Latin. Three hours. Two semesters. Six units.

3-4. **Intermediate Latin.** Courses equivalent to the last two years of high school. Three hours. Two semesters. Six units.

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*Courses usually given only on Los Gatos Campus.

*5-6. **Ecclesiastical Latin.** Selections from ecclesiastical writers, ancient and modern. Three hours. Two semesters. Six units.

*7A-7B. **Latin Prose Composition.** Two hours. Two semesters. Four units.

9. **Latin Prose.** Selected readings from Nepos, Pliny's letters, Eutropius, Florus, the Church Fathers, and medieval Latin. Three hours. One semester. Three units.

10. **Cicero.** Selected speeches. Three hours. One semester. Three units.

11. **Virgil.** Selections from the Aeneid. Three hours. One semester. Three units.

12. **Latin Historians.** Selections from Caesar, Sallust, Nepos, Livy and Tacitus. Three hours. One semester. Three units.

13. **Lyric and Elegiac Poets.** Selections from Catullus, Tibullus, Propertius and Ovid. Three hours. One semester. Three units.

14. **Cicero. Essays.** De Amicitia, De Senectute, and parts of De Natura Deorum. Three hours. One semester. Three units.

15. **Horace.** Odes and Epodes. Selections. Three hours. One semester. Three units.

*18-18B. **Latin Conversation.** Practice in the fundamentals of oral Latin. Daily conversation. Oral examination. Two hours. Two semesters. Four units.

19. Selected readings adapted to the needs of the individual. Hours and units by arrangement.

*101. **Latin Comedy.** Plautus and Terence. One play of each. Three hours. One semester. Three units.

*104. **Virgil.** Eclogues and Georgics. Three hours. One semester. Three units.

*107. **Horace.** Satires, Epistles, and Ars Poetica. Two hours. One semester. Two units.

*108. **Horace.** Selected Odes and Epodes. Three hours. One semester. Three units.

109. **Lucretius.** De Rerum Natura. Three hours. One semester. Three units.

*110. **Cicero.** Rhetorical study of selected speeches. Three hours. One semester. Three units.

114. **Survey of Latin Literature.** Lectures on the development of Latin literature, with assigned readings in selected authors. Three hours. One semester. Three units.

114T. **Survey of Latin Literature.** Same as preceding. All readings, however, done in translation. Two hours. One semester. Two units.

*116A-116B. **Advanced Prose Composition.** Two hours. Two semesters. Four units.

*119. Special Reading Course. Units by arrangement.

GERMAN

See "Division of Foreign Languages"

GREEK

See "Division of Foreign Languages"

*Courses usually given only on the Los Gatos Campus.

HISTORY

Chairman of the Department

Edwin A. Beilharz, A.B., M.A., Ph. D.

Students who wish to make History their major subject, besides completing the other required courses of the lower division, must pass the courses in History 2A-2B, Political Science 1-2, and, at a time to be chosen by the student an additional six unit course in either Economics or Sociology with at least a grade of C.

The major program must include 24 units of upper division work in History. History 101 is required. An average grade of C must be maintained in all courses of the major and at the end of the senior year each student must pass a comprehensive final examination.

The Master's Degree — See the **Announcement of the Graduate Division.**

For the Teaching Major — Refer to index "Teacher Education Program".

2A-2B. History of Western Civilization. A general survey of western culture from its beginnings to the present, emphasizing those institutions which have shaped our modern civilization. Three hours. Two semesters. Six units.

101. Introduction to Historical Methods and Bibliography. Prescribed in the junior year for, and restricted to, students majoring in History. Two papers and a bibliography are prepared by each student; and the use of the library is emphasized. Two hours. One semester. Two units.

131A. The Renaissance and Reformation. A critical study of the revival of the old and the birth of new learning. The Protestant Revolt and the Catholic Counter Reformation. Three hours. One semester. Three units.

131B. The Seventeenth and Eighteenth Centuries. The rise of absolute monarchs. The struggle for European preeminence and world empire. The Benevolent Despots. Three hours. One semester. Three units.

133. The French Revolution. A study of the causes, the course, and the significance of the French Revolution and the Career of Napoleon. Three hours. One semester. Three units.

135. The History of Russia. Cultural, political and economic development of Russia from the rise of the Romanovs to the present. Three hours. One semester. Three units.

145. The Nineteenth Century. A study of the revolutionary movements in Europe stemming from the French and Industrial Revolutions. The rise of the middle classes and the struggle for liberal constitutional government. Underlying social unrest. Three hours. One semester. Three units.

146. The Twentieth Century. The intensification of national and imperial rivalries in Europe, culminating in universal wars. Social upheavals and their effects. Attempts at world organization to enforce peace. Three hours. One semester. Three units.

151. History of England. The growth of the English state and constitution. The English reformation. Constitutional struggles under the Tudor and Stuart monarchs. Three hours. One semester. Three units.

155. The British Commonwealth and Empire. A study of developments in England and in the British world system in modern times. The rise of the free dominions. Imperial problems in India, the Near East, and Africa. England in the two world wars and their aftermath. Three hours. One semester. Three units.

161-161B. History of the Americas. The aboriginal world. The course of exploration and conquest. The colonial systems. The revolutions in North and South America. Organization of the new self-governing nations. Inter-American relations. The Monroe Doctrine, Pan-Americanism and the Good Neighbor Policy. Three hours. Two semesters. Six units.

165. The A.B.C. Countries. A study of the history of Argentina, Brazil, and Chile, with attention to their special character, resources, and problems. Three hours. One semester. Three units.

166. Mexico. The history of Mexico from the sixteenth century to the present, with emphasis on the national period. Three hours. One semester. Three units.

171A-171B. History of the United States. A general course sketching the chief factors in our national development. Colonial beginnings. The Revolution. The Constitution. Political history of the United States. Three hours. Two semesters. Six units.

173A-173B. The United States in the Nineteenth Century. A history of the United States from the Inauguration of Washington to the rise of progressivism and the war with Spain. Three hours. Two semesters. Six units.

174A-174B. Recent History of the United States. The major developments in domestic problems and in foreign relations since 1896. Three hours. Two semesters. To be offered in alternate years. Six units.

187. History of the West. The spread of the frontier and the emergence of special western problems, with emphasis on the period since the Civil War. Three hours. Fall semester.
To be offered in alternate years. Three units.

189. California. The history of California, with major attention given to the period following its annexation to the United States. Three hours. Spring semester.
To be offered in alternate years. Three units.

191. The Far East. A general hsitory of the East Asiatic nations, with emphasis on the recent period. Three hours. One semester. Three units.

198. Research Techniques. Supervised work for the senior thesis. One unit.

GRADUATE COURSES

(Concerning conditions for admission to graduate courses, refer to the **Announcements of the Graduate Division.**)

201A-201B. Historiography and Historical Criticism. A study of selected historians and schools of historical interpretation. Two hours. Two semesters. Four units.

220A-220B. Seminar in Medieval History. Two semesters. Six units.

240A-240B. Seminar in Modern European History. Two semesters. Six units.

270A-270B. Seminar in United States History. Two semesters. Six units.

280A-280B. Seminar in North American History. Two semesters. Six units.

283A-283B. Seminar in Hispanic American History. Two semesters. Six units.

298. Directed Research. For graduate students in history. Three-six units.

ITALIAN

See "Division of Foreign Languages"

LATIN

See "Division of Foreign Languages"

LAW

Professional Courses

First Year

101. Legal Bibliography. The study of the use of law books, including practical problems in the use of Reports, Statutes, Encyclopedias, Digests, Periodicals and Citation Books. One unit.

102. Contracts. The formation of contracts, offer and acceptance, the doctrine of consideration, assignments, joint contracts, joint and several contracts, conditions, third party beneficiary contracts, Statute of Frauds, excuses for non-performance, impossibility, mistake, illegality, damages for breach, remedies, recission, restitution, quasi-contracts. Six units (3+3).

103. Torts. Liability and defenses in action for intentional injury to person and tangible property; liability based on negligence at common law and under statutory law; proximate cause, survival and wrongful death, strict liability; nuisance; duties of owners and occupiers of land; tort and contract; misrepresentation; defamation; right of privacy; malicious prosecution and abuse of process. Six units (3+3).

104. Property I. The elements and legal consequences of possession, finding, bailments, gifts, bona fide purchases. Estates in land possessory, concurment, future. The Statute of Uses and its consequences. Landlord and tenant, modern land transactions; Statute of Frauds, deeds, recording. Easements and licenses, lateral and subjacent support, water rights, boundaries. Six units (3+3).

106. Crimes. Origin and sources of the criminal law. Substantative law of crimes and particular elements thereof. Comparative study of the criminal act with reference to various defenses thereto. Three units.

107. Agency. Creation of the relation; rights and duties of principal and agent; rights and duties of third parties; liability of principal; liability of agents, non-disclosure of principal; ratification, termination of relation. Two units.

108. Legal Writing. This course is designed to give practical experience in writing a law note and drafting a legislative bill. One unit.

109. Practice Court. Actual practice in the preparation and presentation of cases for trial. + or —

110. Jurisprudence. A study of: Fundamental Elements of Law; of the evidences of universal and fixed cultural values in all society; and of certain current attitudes regarding basic principles of law. Three units.

111. Equity I. Origin and nature of equity jurisdiction, jurisdiction in personam and in rem, extra territorial effects of equity decrees, specific performance of contracts. Three units.

Second Year Courses

201. Evidence. The law of evidence in civil and criminal trial under the common law and with particular reference to Federal and California Courts; preparing for trial, examination of jurors and witnesses, relevancy, competency, materiality; offer of objection, scientific evidence, methods

of proof, circumstantial evidence, demonstrative evidence, documentary evidence, exemptions to the hearsay rule, burden of proof and presumptions. Six units (3+3).

202. Business Organizations. The partnership and joint venture, the tests of distinguishing them from other business forms. The rights, powers and duties of partners, and the dissolution and liquidation of the partnership. The corporate entity and its relation to the state, third parties, its directors and its shareholders. The powers and duties of promoters, directors and officers and stockholders derivative actions. Course material to be announced. Six units (3+3).

203. Wills and Estates. Intestate succession. Testamentary capacity, undue influence, fraud, fraud and mistake. Execution of formal and holographic wills. Integration, incorporation by reference and non-testamentary act. Revocation, including dependent relative revocation, and revival. Pretermitted heir and lapsed gifts. Ademption by satisfaction and by extinction. Advancements, increase and exoneration. Abatement of gifts. Three units.

204. Property II. The varieties of future interests, including reversions, remainders, executory interests, possibilities of reverter and rights of entry. Rule in Shelley's Case, Doctrine of Worthier Title, Rule against Perpetuities, Alienability, Devisability and Descendability. Powers of appointment. Problems of Construction. Class gifts. Two units.

206. Trusts. The nature and creation of a trust; the express trust, charitable trust, spendthrift and business trust, resulting and constructive trusts; problems of administration and termination. The rights and duties of the trustee, beneficiary and third parties. Three units.

207. Estate and Gift Taxation. Its problems and its procedures as well as income taxation of estates and trusts including the problems of attribution in assignments of income. Three units.

211. Equity II. Specific reparation for torts, nature of so-called equitable defenses, bills of interpleader, bills to quiet title, mutuality of performance and remedy, equitable servitude. Three units.

Third Year Courses

301. Community Property. The existence of the community; law of separate and community property, property rights and between husband and wife; management, control and liability for debts; disillusion, transfer inter se. Three units.

302. Procedure I. Jurisdiction of California Courts; summons, statutes of limitations; trial procedure; dismissal or non-suit, client's verdict, verdict, judgment; motion for new trial, writs. Three units.

303. Procedure II. Nature of the civil action under the code; parties, complaint, demurrer, answer; cross-complaint; reply; demurrers to pleadings subsequent to complaint. Three units.

304. Conflicts of Law. Sources and development of private, interstate, and international law; the control exercised by the federal government and the limitations under the states of the Union; jurisdiction of courts and foreign judgments; the rules applied with respect to procedure, wrongs, contracts, property, business organizations, and administration of estates; privileges and immunities of citizens and rights of aliens. Three units.

305. Constitutional Law. The doctrine of judicial review. Reciprocal immunities of the federal and state governments. The delegated powers of the federal government and the reserved powers of the federal government as limitations upon the exercise of state powers. The protection

of individual rights as a limitation upon the exercise of federal and state powers. Six units (3+3).

306. Legal Ethics. A complete study of the Canons of Ethics both of the State Bar of California and the American Bar; Discipline of lawyers, duties of lawyers to courts and clients; ethics of legal employment, solicitation of business; attorney's fees and the client. One unit.

308. Federal Income Taxation. Federal Income Taxation of the individual corporation and partnership, including capital gains and losses, basic problems and tax-free exchanges. Three units.

ELECTIVES

401. Federal Courts. The Federal Court system; basic jurisdictional requirements with particular emphasis on the Federal District Court; inter-relation of state and federal courts; federal rules of civil procedure, appelate procedure. Three units.

402. Insurance. The concept of insurance, statutory regulations, insurable interests, construction and interpretation of life, property, accident and liability insurance contracts; warranties, representations, concealment; subrogation; warranty; estoppel. Two units.

403. Labor Law. A survey of the development of the Labor movements in the United States; development of the common law; laws relating to union organizations, recognition, collective bargaining; wages and hours legislation; strikes, picketing, boycotts, lockouts, black listing; anti-injunction laws; labor and the anti-trust laws. Three units.

404. Domestic Relations. Marriage, divorce, annulment, separation; alimony and property settlements; parent and child; guardianship, adoption, rights and liabilities of spouses. Three units.

(In conjunction with the course a non-credit seminar in Canon Law for Catholics and interested students is offered re marital problems.)

405. Security Transactions. A study of the legal principles relating to the use of mortagage, deed of trust, pledges, lien, chattel mortgage, conditional sale and the trust receipt; nature of the interest; rights of the redemption, discharge, subrogation, exoneration. Three units.

406. Municipal Corporation. Nature, development, sources, evidence, and scope of international law. Modern growth and organization of community of nations. Rights and duties of states. Jurisdiction, Diplomacy and treaties. International legislation and administration. Pacific settlement of disputes, League of Nations and United Nations. Laws of war and neutrality. Three units.

407. Trade Regulations. Contracts and combinations in restraint of trade; unfair competition; anti-trust laws; regulation of methods of competition; trade marks, trade names and unfair competition; governmental regulation of misrepresentation and pricing practices. Three units.

408. Corporate Taxation Seminar. Sub chapter C of the Corporate Tax Provisions of The Internal Revenue Code 1954. Special emphasis on dividends, partial liquidations, redemptions, and preferred stock "bailouts." This course is also open to members of the Bar. Two units.

409. Criminal Procedure. A study of the procedural aspects of a criminal trial. Administration of criminal justice, with reference to the rights of criminal defendants under State and Federal laws. Two units.

410. Administrative Law. Creation and functions of administrative tribunals, state and federal; procedures and practices before such agencies with particular emphasis on Federal and State administrative and procedural acts. Judicial review of administrative action. Three units.

411. Estate Planning. A practical course in lifetime and testimentary planning for the ordering and distribution of the client's property in a manner designed to achieve his legitimate objectives, avoid estate shrinkage through lack of liquidity, and avoid unnecessary taxes. The course consists of lectures and problems in planning and drafting. Three units.

412. Sales. Transfer of title to personal property; documents of title; conditional sales; risk of loss; express and implied warranties; statute of frauds; liability for defects of title, remedies of buyer and seller. Three units.

413. Negotiable Instruments. Factors of negotiability; negotiation, delivery, transfer and endorsement; the holder in due course; real and personal defenses; presentment; liability of parties; discharge. Three units.

415. Appellate Proceedings. A study of the methods of practice and procedure in the state and federal courts. Two units.

416. Canon Law. A survey of the Codes of Canon Law. The influence of Canon Law on the development of the common law. A study of problems of the attorney in presenting cases for administrative or judicial decision by the ecclesiastical tribunals. Specific emphasis is placed upon the doctrines of the Code respecting marriage, divorce, annulment, adoption, and other related marital problems. Two units.

MATHEMATICS

Chairman of the Department
Irving Sussman, B.S., M.A., Ph.D.

In addition to providing courses required by students of the Engineering College and the Departments of Physical Science, the Mathematics Department offers work leading to a major or minor in Mathematics, as well as courses for general education.

Prerequisite for the Upper Division courses, except where noted otherwise, are the lower division courses 3A, 3B, 4A, 4B, and 8. In addition, unless this requirement is waived in writing by the department Chairman, the student shall have completed at least one college year of physical science or the equivalent in acceptable engineering courses. In general, a student will be permitted to undertake upper division work in mathematics only if his grades in the lower division courses clearly indicate an aptitude and ability to undertake the more advanced work successfully.

A minimum of 24 units of upper division mathematics courses, besides seminar requirements, is required for the major in Pure Mathematics. This work normally includes Mathematics 101, 103, 109, 110A, 111, 112, 115, and 119A. Consultation with the Chairman before the beginning of the junior year will be necessary for admission to the major program.

A weekly one-hour seminar is required of all majors in Mathematics during the junior and senior years, and students will be held also to such qualifying examinations and study projects as may be prescribed by the Chairman, or by the student's major advisor.

1. Introduction to College Mathematics. A thorough review of Algebra and Trigonometry, designed particularly for students majoring in the physical sciences, engineering and mathematics whose high school background has not fully prepared them for Mathematics 3A. The course content of C and D will be covered at a much accelerated pace, and additional topics added, such as Determinants, Introduction to Theory of Equations, Permutations and Combinations. Five hours per week. Three units.

Prerequisites: Two years of high school algebra, one year of Plane Geometry, one half year Trigonometry.

2A. Basic Concepts of Modern Mathematics. A course on the collegiate level for students who wish to become acquainted with modern mathematical thought and materials. Designed as a Liberal Arts course, this course will nevertheless be useful for mathematics as well as physical science majors. The course will stress the abstract concepts and fundamental ideas which underlie modern mathematics. Three hours. One semester. Three units.

2B. Basic Concepts of Modern Mathematics. II. A continuation of Mathematics 2A. Three hours. One semester. Three units.

Prerequisite for Mathematics 2A and 2B: Two years of high school mathematics. By permission of the Instructor, either part may be taken separately.

3A. Analytic Geometry and Calculus. Basic concepts of linear analytic geometry, from the vector point of view. Functional concepts and graphing. Basic concepts of the Calculus; differentiation and integration of algebraic functions, with applications. Three hours lecture and one hour review or quiz. One semester. Three units.

Prerequisite: Three and one half years of high school mathematics and acceptance by qualifying examination; or, alternatively, an acceptable grade in Mathematics 1.

3B. Analytic Geometry and Calculus. Continuation of Mathematics 3A. Introduction to the concept of real numbers and the ideas of limit and infinitesimal function. The Definite Integral as limit of sums, with application to geometric and physical problems. Differentiation of the Elementary Functions, and applications. The Conic Sections. Polar Coordinates. Three hours lecture. One semester. Three units.

Prerequisite: Mathematics 3A or equivalent.

4A. Analytic Geometry and Calculus. Non-elementary functions. Mean value theorems. Indeterminate forms. Methods of formal integration. Approximate integration. Analytic Geometry of space, principally by vector methods. Partial differentiation. Applications. Three hours lecture. One semester. Three units.

Prerequisite: Mathematics 3B, or equivalent.

4B. Analytic Geometry and Calculus. Applications to the Geometry of space. Coordinate systems. Multiple integration. Introduction to Infinite Series. Applications. Three hours lecture. One semester. Three units.

Prerequisite: Mathematics 4A.

8. Theory of Algebraic Equations. Topics include Complex Numbers, general theorems on algebraic equations, Rolle's Theorem, Descartes' Rule of Signs, solution of cubic and quartic equations, simultaneous equations, inequalities, introduction to Probability. Three hours lecture. Three units.

Prerequisite: Mathematics 3B.

10. Numerical Computation. Modern computational methods involving the use of such devices as slide rule, desk calculators, electronic calculators, tables, etc. The theoretical aspects behind such aids to computation will be principally considered, and applications made to problems involving numerical data and empirical formulae. Elementary introduction to approximation techniques. Two hours lecture; one hour laboratory. One semester. Two units.

Prerequisite: Mathematics 3B. Special students may be admitted by consent of the instructor.

101. Advanced Calculus. I. A rigorous investigation of the real number system, with other topics as time permits. Concepts of limit; continuity, differentiability of functions of one real variable; theorems of Differential and Integral Calculus. Three hours. One semester. Three units.

Prerequisites: Mathematics 4B and Mathematics 8.

102. Advanced Calculus. II. Topics in the study of functions of several real variables. Partial differentiation. Multiple integrals. Taylor's Theorem. Line and surface integrals. Special functions, such as Gamma and Bessel functions. Applications. Three hours. One semester. Three units.

Prerequisite: Mathematics 101.

103. Vector Analysis. The algebra of vectors, and applications to mechanics, electricity and geometry. Vector functions and vector differential calculus. Applications of gradient, divergence and curl; Green's and Stokes' theorems. Introduction to vector Integral Calculus. Three hours. One semester. Three units.

Prerequisite: Mathematics 4B.

109. Matrix Theory. Linear transformations and the algebra of matrices. Applications to geometry, engineering and physics. Quadratic Forms. Other topics, as time permits. Three hours. One semester. Three units.

Prerequisites: Mathematics 4B and 8.

110A. Advanced Engineering Mathematics. I. Special topics in higher mathematics useful to engineers and physicists, such as Hyperbolic Functions, Elliptic Integrals; Fourier Series; Partial Differential Equations. Applications. Three hours. One semester. Three units.

Prerequisite: Mathematics 119A.

111. Abstract Algebra. Postulational systems in general and their underlying logic. Elementary theory of groups, rings and fields. Three hours. One semester. Three units.

Prerequisites: Mathematics 3B and Mathematics 8.

112. Foundations of Geometry. An introductory survey course covering the basic ideas of Geometry as the subject has developed from ancient Greek times, but with emphasis on the modern phases. Non-Euclidean and Projective Geometries will be introduced and their principle ideas and the theorems analyzed. Three hours. One semester.

Prerequisite: Mathematics 3B. Three units.

115. Elementary Number Theory. Euclid's algorithm and the fundamental theorems on divisibility. Chinese Remainder Theorem. Prime Numbers. Consequences. Theorems of Fermat, Euler and Wilson. Quadratic residues. Diophantine analysis. Three hours. One semester.

Prerequisites: Mathematics 3A and Mathematics 8. Three units.

119A. Differential Equations. I. Solution of ordinary differential equations and applications to mechanics, engineering and electricity. Introduction to series solutions and numerical methods. One semester. Three hours. Three units.

Prerequisite: Mathematics 4B.

160. Introduction to Symbolic Logic. Elementary Set Theory. The concept of a Boolean Algebra. The methods and principles underlying the algebra of symbolic logic, as developed from postulational beginnings. Development of the Propositional Calculus. (See Philosophy 160.) Two hours. One semester. Two units.

199. Seminars. Seminars required for mathematics majors. Conduct of the seminars is at the discretion of the instructors conducting them, according to the needs of the student participants.

MECHANICAL ENGINEERING

Chairman of the Department

Richard K. Pefley, B.A., M.S.

1. Engineering Drawing. Lettering. Use of instruments. Orthographic projection. Isometric drawing. Oblique drawings. Single auxiliary views. Sections and convention. Fasteners. Dimensioning. A.S.A. Drafting room standards. Six hours lecture and drafting. Two units.

2. Descriptive Geometry. Theory of projection. Auxiliary views. Revolution. Point, line and plane problems. Development of surfaces. Intersections. Dimensioning and working drawings. Lettering. Drafting room standards. Six hours lecture and drafting.

Prerequisite: M.E. 1. Two units.

11. Manufacturing Processes. The manufacture, properties and use of modern materials of engineering. Heat treatment, foundry, machine tool operation, and molding of plastics is included in the laboratory. One hour lecture and three hours laboratory. Two units.

15. Instrumentation. Experimental study of pressure, temperature, distance, area, speed and torque measuring devices. The study includes an introduction to considerations of experimental error, tests techniques and report writing.

Prerequisite: To accompany Physics 9. Two units.

118. Machine Design. The application of mathematics and fundamental principles of statics, dynamics and strength of materials to the field of machines with relative motion. Mechanisms commonly used for specific purposes are analyzed. One hour lecture and six hours computation and graphical analysis. Three units.

119. Machine Design. Experience acquired in M.E. 118 is combined with the students knowledge of mechanics, thermodynamics, strength and properties of materials, mathematics and physics to specific projects. Two hours lecture and three hours computation and graphical analysis. Three units.

120. Machine Design. Continuation of M.E. 119, with emphasis on synthesizing rather than analyzing. Advanced methods of determining stresses and deflections of machine elements are introduced. Two hours lecture and three hours computation and graphical analysis. Three units.

121. Thermo-fluid Mechanics I. This course is an introductory study in fluid mechanics and thermodynamics. Newton's Laws of Motion, the Conservation Principle as applied to matter and energy, the concept of a process, and pertinent properties of matter are introduced, examined and utilized to discuss such subjects as: forces acting on submerged surfaces, the behavior of incompressible flowing fluids, the energy required for pumping and transmitting fluids and the energy derivable from elementary types of prime movers such as engines and turbines. Three hours lecture.

Prerequisite: C.E. 16. Three units.

122. Thermo-fluid Mechanics II. This course is an extension of M.E. 121. The extension is made through an introduction to the 2nd Law of Thermodynamics, concepts of reversible versus irreversible processes, heat engines, heat pumps, properties of mixtures of phases of a substance or substances, impulse-momentum principles and compressible flow. These topics are utilized in conjunction with the information acquired in M.E.

121 or to gain insight into problems concerning the transmission of gases and vapors, the performance of steam and internal combustion engines, air conditioning and refrigeration processes, and propulsion systems. Five hours lecture.

Prerequisite: M.E. 121. Five units.

123. Thermo-fluid Mechanics. Condensed treatment of M.E. 122 for Civil Engineers.

Prerequisite: M.E. 121. Three units.

131. Thermo-fluid Mechanics Laboratory I. The concept of dimensional analysis is introduced as an experimental aid, and in conjunction with the material presented in M.E. 121 is utilized to experimentally examine the behavior of pumps, venturi meters, fluid flow in pipes and flow about immersed bodies. Emphasis is placed on correct utilization of instruments, data accuracy analysis and interpretative analysis of experimental results in the light of known physical laws and the behavior of machines and processes. Three hours laboratory.

Prerequisites: To be taken concurrently with M.E. 121. One unit.

132. Thermo-fluid Mechanics Laboratory II. A continuation of M.E. 131 with the analysis of more complex systems such as gas compressors, steam power plants, internal combustion engines, air conditioning and refrigeration systems. Six hours laboratory.

Prerequisite: To be taken concurrently with M.E. 122. Two units.

133. Thermo-fluid Mechanics Laboratory. To accompany M.E. 123. One unit.

134. Mechanical Engineering Laboratory. Advanced applications of the principles of Thermo-fluid Mechanics Dynamics and Heat Transfer. Experiments involving Internal Combustion Engines. Refrigeration and Compressible Flow Systems are included.

Prerequisite: M.E. 132. One unit.

141. Heat Transfer. An introduction to the concepts of conduction, convection and radiation heat transfer and application of these concepts to engineering problems. Two hours lecture and three hours of problem solving and experimentation.

Prerequisites: M.E. 122 and M.E. 132. Three units.

142. Heat Transfer. Continuation of M.E. 141, with emphasis on convective heat transfer and heat exchanger design. Two hours lecture and three hours of problem solving and experimentation.

Prerequisite: M.E. 141. Three units.

143. Machine Vibrations. Elementary consideration of machine vibrations; causes, methods of damping and isolation. Two hours lecture.

Prerequisite: C.E. 16. Two units.

145. Internal Combustion Engines. Thermodynamics of reciprocating and continuous combustion engines. Idealized and real fluid cycle analysis. Study of major variables, compression ratios, fuels and air fuel ratios, etc. Three hours lecture and three hours of laboratory experimentation.

Prerequisite: M.E. 141. Four units.

147. Physical Metallurgy. A study of Phase equilbria, the fundamental structure of metals and alloys, the transformations in steel, the functions of alloying elements in steel, grain size and grain growth, hardening, and heat treatment. One hour lecture and three hours laboratory problems and experimentation.

Prerequisite: Senior standing in Mechanical Engineering. Two units.

150. Heating, Ventilating and Air Conditioning. Psychrometry, Cooling load and Heating load computation. Principles of refrigeration and refrigerants. Three hours lecture and three hours of laboratory computations and experimentation.
Prerequisite: M.E. 141. Four units.

151. Advanced Mechanics of Materials. The analysis of stresses, strains, and deflections in structures and machines. Limitations of the analyses used in elementary strength of materials. Selected topics in the theory of beams, plates and shells, rotating disks, torsion, and buckling. Three hours lecture. Three units.
Prerequisites: C.E. 116 and Math. 121.

152. Advanced Fluid Mechanics. Application of the principles of thermo-fluid mechanics is made to selected topics in the theory of the boundary layer, compressible flow, aerodynamics, fluid machinery, and lubrication. Three hours lecture.
Prerequisite: M.E. 122 or M.E. 123 or concurrent registration.
Three units.

155. Aerodynamics and Aircraft Structures. Basic principles of flight, mechanics of lift and drag, analysis of aircraft performance, stability and control. Introduction to structural design. Three hours lecture and three hours problem solving and experimentation.
Prerequisites: C.E. 116, M.E. 121. Four units.

160. Management Engineering. Industrial organization. Plant location, buildings, equipment, layout, manufacturing processes; work study, work measurement, wages and salaries. The product, design, costs, production scheduling and dispatching; control of production and quality. Employees, training, union relations, safety and health. Three hours lecture.
Three units.

161. Management Controls. Production, cost and quality. Production control as a staff function. Organization, data collection, systems, operation. Flexible budgetary control; data collection, sales forecasting, material and labor standards, burden rates, relation to production control, operation of the budget. Quality standards, inspection. Statistical measures; sampling, the normal curve, control charts. Three hours lecture.
Three units.

162. Methods Engineering. Process analysis, plant layout, materials handling, operations analysis, principles of motion economy, micromotion analysis, installing programs, suggestion systems. Three hours lecture. Three units.

163. Work Measurement and Wage Payment. Time study, predetermined elemental data systems, compiling standard data for an organization, the development of labor standards. Job evaluation and merit rating. Wage incentive systems, non-financial incentives, wage and salary administration. Three hours lecture. Three units.

164. Management Engineering II. Production management policy and related problems. Case studies. Three hours lecture.
Prerequisite: M.E. 160. Three units.

165. Engineering Economics. Definition of economics. Basic concepts. Business units. Money and money systems. Investments. Labor relations. The economics of collectivism. Engineering economy studies. Present worth. Capitalized cost. Depreciation. Engineering reports and budgets. Contracts and specifications. Three hours lecture.
Three units.

170A. Thesis. Investigation of some engineering problem and the writing of an acceptable thesis. Conferences as required.
Prerequisite: Senior standing in Mechanical Engineering. One unit.

170B. Thesis. Continuation of M.E. 170A.
Prerequisite: M.E. 170A One unit.

170C. Thesis. Continuation of M.E. 170A.
Prerequisite: M.E. 170A. Two units.

198. Seminar.
Prerequisite: Senior Standing One unit.

199. Individual Study. By special arrangement with the Chairman of the Department. Units: arranged.

MILITARY SCIENCE AND TACTICS

Basic Course

1-2. First Year. A survey of American Military History to give a sound foundation in the principles of the art of warfare and of leadership as they are exemplified in American History from 1607-1953. The Organization of the Army and ROTC, preliminary marksmanship, range firing, leadership and drill. Two hours lecture, one and a half hour drill. Two semesters. Three units.

3-4. Second Year. Map and aerial photographs reading. Functioning, care and technique of fire of infantry weapons to include recoilless rifles, automatic rifles, machine guns, and mortars. Leadership training continued. Two hours lecture, one and a half hour drill. Two semesters. Three units.

ADVANCED COURSE

101-102. First Year. Leadership techniques and military teaching principles with practical work in each. Principles of small unit tactics; signal communications; familiarization with organization, mission, functions of the branches of the Army. Four hours lecture, one and a half hour drill. Two semesters. Six units.

103-104. Second Year. Staff organization, planning and functioning, using the combined arms operations, intelligence, and training. Basic concept of military personnel management and logistical operations. Preparation of future officers for Active service by orientation on geographical and economic factors, their influence on the division of peoples into nations and the courses of war. Orientation on service life and responsibilities of a leader. Four hours lecture, one and a half hour drill. Two semesters. Six units.

Summer Training Camp

The six weeks training supplements the campus instruction by application of the theories taught in the classroom to practical work in the field. This practical work includes firing of all types of infantry weapons, tactical and technical field problems, and demonstrations of the massed dires of the combat arms. Throughout the camp period, special emphasis is placed on the development of leadership and the individual's capability to function effectively as an officer in a small unit. Neatness, military bearing, and soldierly behavior also are emphasized. Training is conducted within a 44-hour, 5½ day week and normally in the summer between the junior and senior years.

MUSIC

Director

Thomas Fenyo, B.S., M.A., Ph.D.

The University offers no Major in Music. However, credit may be earned in elective units in any one of the various colleges of the University.

Music courses are offered so that students will be afforded the opportunity of experiencing music as an integral part of their cultural life; to present music as a means of broadening their field of action and to give them an opportunity to participate in the various extra curriculam activities approved by the University.

1. **Band.** Two hour-and-a-half sessions and one sectional rehearsal per week. Open to all students whose musicianship meets with the requirements set by the instructor. One unit.

2. **Glee Club.** Two hour-and-a-half sessions and one sectional rehearsal per week. Open to all students whose musicianship meets with the requirements set by the instructor. One unit.

3. **Sacred Music.** Rudiments of Gregorian Chant, harmony and polyphony. Theory put to practice by singing at Mass and other functions in the Mission Church. Two semesters. Two units.

5. **Fundamentals of Music.** An introductory course in musicianship. A study of the fundamentals of notation, exercises in sight reading with a view to developing proficiency in reading and singing. Two units.

10A-10B. History and Appreciation of Music. History of the principal types of music and of the principal composers. The course aims also at imparting some understanding of the technical elements of music. Lectures supplemented by recordings. Two hours. Two semesters. Four units.

11. **Choral Music.** A study of choral music, chiefly sacred, including Gregorian Chant, Polyphony, and modern works. Two hours. One semester. Two units.

12. **The Symphony.** A study of symphonic works from the mid-eighteenth century to the present. This will include a three-hour listening period instead of a lecture every three weeks. Two hours. One semester. Two units.

13. **The Opera.** A study of the opera from Mozart to the present. This will include a three-hour listening period instead of a lecture every three weeks. Two hours. One semester. Two units.

PHILOSOPHY

Chairman of the Department

Reverend Austin J. Fagothey, S.J., M.A.

Students who wish to make Philosophy their major subject, besides completing the other required courses of the lower division, must pass the course in Philosophy 41A-41B with at least a grade of C.

The major program must include 24 units of upper division courses in Philosophy. An average grade of C must be maintained in the major subject and, at the end of the senior year, each student must pass a comprehensive final examination.

Upper division students majoring in Philosophy should consult the note preceding Philosophy 141.

A minor, including 12 upper division hours in addition to the lower division prerequisites, must be chosen by each student making Philosophy his major.

9. **Logic.** An introductory course in the science of correct thinking, comprising both deductive and inductive inference, and scientific method. Exercises in the various forms of logical inference and in the detection of fallacies. Spring semester. Three hours. Three units.

20. **Metaphysics I.** An introduction to the student of the perennial problems of philosophy, such as being and becoming, unity and multiplicity, together with Aristotelian and Thomistic solutions such as potency and act, matter and form, analogy, the four causes. Fall semester. Three hours.
Prerequisite: Philosophy 9. Three units.

21. **Philosophy of Nature.** The main problems of cosmology: the structure of the physical universe and its philosophical interpretation. Matter and energy, quantity and motion, space and time. Mechanistic and theological theories compared. Fall semester. Three hours.
Prerequisite: Philosophy 9. Three units.

22. **Philosophy of Man.** Philosophical psychology as distinct from empirical psychology. Man in his unity; his sensitive, intellectual, and volitional life. Spring semester. Three hours.
Prerequisite: Philosophy 21. Three units.

41A-41B. **History of Philosophy.** A comprehensive survey of the whole history of philosophy, ancient, medieval, and modern. Required of Philosophy majors, but open to others with sophomore standing. Both semesters. Three hours.
Prerequisite: Philosophy 9. Six units.

61. **Logic.** This subject, together with Philosophy 62, 63, and 64, constitutes a compendious course designed for engineering students. Traditional logic and deductive inference. Induction and scientific method. Exercises in various forms of logical inference. Open to engineering students only. Fall semester. Three hours. One and one half units.

62. **Philosophy of Nature and Man.** Introduction to philosophy and metaphysical principles. Origin of philosophy. Cosmology or the philosophical study of the physical universe. Rational psychology or the philosophical study of man; mind and body, intellectual and volitional operations. Open to engineering students only. Spring semester. Three hours. One and one half units.
Prerequisite: Philosophy 61.

63. **Knowledge and Reality.** The problems of epistemology and natural theology. The theory of knowledge: the validity of human reason in its pursuit of truth. The existence, nature, and attributes of God; His relations to the universe. Open to engineering students only. Fall semester. Three hours.
Prerequisite: Philosophy 62. One and one-half units.

64. **Philosophy of Morals.** General Principles of ethics and their application to man's individual and social life: man's personal, marital, proprietary, industrial, political, and international rights and duties. Open to engineering students only. Spring semester. Three hours.
Prerequisite: Philosophy 63. One and one-half units.

82. **Ethics.** General principles of morality and their practical application to the chief spheres of human conduct. Emphasis is placed on the medical aspects of morality for the benefit of professional students. This course is not open to students required to take Philosophy 151 and 152. Spring semester. Three hours. Three units.

109. Theory of Knowledge. A critique of knowledge: idealistic and realistic attitudes. The metaphysics of knowledge: formal truth and certitude. Fall semester. Three hours.
Prerequisite: Philosophy 22. Three units.

110. Metaphysics II. The existence, nature, and attributes of God as knowable from human reason. Philosophical theories on God and His relation to the universe examined and evaluated. Spring semester. Three hours.
Prerequisite: Philosophy 109. Three units.

112. Metaphysics. The fundamental principles of ontology and natural theology. Being as being: the act of existence, the primary categories, the transcendental attributes of being. The supreme being: the existence, nature, and attributes of God; philosophical theories on God and the universe examined and evaluated. Spring semester. Three hours.
Prerequisite: Philosophy 109. Three units

117. Theory of Knowledge. A seminar in epistemology, covering more intensely the material of Philosophy 109, for which this course is an alternative. Open only to select students who have show marked proficiency and interest in philosophy. Fall semester. Three hours.
Prerequisite: Philosophy 22. Three units.

118. Metaphysics. Seminar in the main problems of ontology and natural theology, for select students who have shown particular aptitude and interest in Philosophy. Alternative to Philosophy 112. Spring semester. Three hours.
Prerequisite: Philosophy 109 or 117. Three units.

151. Basic Ethics. The general principles of morality. The aim of human life, the norm of morality, the moral law, obligation and responsibility, virtue and vice, rights and duties. Fall semester. Three hours.
Prerequisite: Philosophy 110. Three units.

152. Social Ethics. The application of general moral principles to definite human rights and duties. The ethics of society; domestic, industrial, political, and international. Spring semester. Three hours.
Prerequisite: Philosophy 151. Three units.

UPPER DIVISION COURSES FOR PHILOSOPHY MAJORS

The following courses, several of which are offered each year, are designed for those majoring in Philosophy, but are open to other students with upper division standing. Those majoring in Philosophy must take 24 units of upper division material; the regular Philosophy curriculum for all Arts students supplies 12 of these units; the remaining 12 units (not more than 5 of which should come from courses 160 to 164A-B) must be taken from the following courses:

141. Plato. A study of several of the Dialogues in conjunction with the great commentators. Outside readings and reports assigned. Two hours. Two units.

142. Aristotle. The chief purpose of this course is to acquaint the student with the Aristotelian corpus. Either the Organon, the Physical works, the Metaphysics, the Ethics, or the Politics will be read and the various theories of interpretation considered. Two hours. Two units.

143. The Thomistic Synthesis. An attempt, working from the Thomistic text, to disengage the fundamental unifying principles which give the Thomistic philosophy its lasting value. Two hours. Two units.

144. Seventeenth Century Philosophy. The definitive break from the medieval tradition and the rise of modern philosophy. The rationalism of Descartes, Spinoza, and Leibniz, as contrasted with the empiricism of Locke, Berkeley, and Hume. A more intensive study of some of these philosophers' writings. Two hours. Two units.

145. Kant and the German Idealists. Immanual Kant and his reaction to the empiricism of Hume and the rationalism of Leibniz and Christian Wolff; his influence on Fichte, Shelling, and the Hegelian tradition. Selections from the major works will be read and analyzed. Two hours. Two units.

146. Contemporary European Philosophy. A survey of leading contemporary schools of thought. At the discretion of the professor, an intensive stuly will be made of more particular trends in present day thought, such as existentialism, logical positivism, or recent developments in Thomism. Two hours. Two units.

147. American Philosophy. A survey of the main movements in American philosophy from its beginning, with particular stress on recent and contemporary trends, such as pragmatism, instrumentalism, and personalism. Two hours. Two units.

160. Introduction of Symbolic Logic. Elementary Set Theory. The concept of a Boolean Algebra. The methods and principles underlying the algebra of symbolic logic, as developed from postulational beginnings. Development of the propositional Calculus. (See Mathematics 160.) Two hours. One semester. Two units.

161. Aesthetics and the Philosophy of Art. An historical introduction to the problems of aesthetics. The metaphysics of the Beautiful; the nature and relationship of art and prudence, and the nature of poetic intuition. Two hours. Two units.

162. Philosophy of History. A study of the attempts philosophers have made to discover the nature of history, its basic schemes and patterns. Critical evaluation of these theories. Two hours. Two units.

164A-164B. Political Philosophy. A survey of the basic concepts of justice, right, law, and sovereignty as treated by various Western political pholosophers. Same as Political Science 118A-118B. Three hours. Two semesters. Six units.

190. Research Techniques. Supervised work for the senior thesis. One unit.

Courses numbered from 171 to 177 will not be offered after June, 1958.

171. Plato. A study of several of the Dialogues in conjunction with the great commentators. Outside readings and reports assigned. Three hours. Three units.

172. Aristotle. The chief purpose of this course is to acquaint the student with the Aristotelian corpus. Either the Organon, the Physical works, the Metaphysics, the Ethics, or the Politics will be read and the various theories of interpretation considered. Three hours. Three units.

173. The Thomistic Synthesis. An attempt, working from the Thomistic text, to disengage the fundamental unifying principles which give the Thomistic philosophy its lasting value. Three hours. Three units.

174. Seventeenth Century Philosophy. The definitive break from the medieval tradition and the rise of modern philosophy. The rationalism of Descartes, Spinoza, and Leibniz, as contrasted with the empiricism of Locke, Berkeley, and Hume. A more intensive study of some of these philosophers' writings. Three hours. Three units.

175. Kant and the German Idealists. Immanual Kant and his reaction to the empiricism of Hume and the rationalism of Leibniz and Christian Wolff; his influence on Fichte, Schelling, and the Hegelian tradition. Selections from the major works will be read and analyzed. Three hours. Three units.

176. Contemporary European Philosophy. A survey of leading contemporary schools of thought. At the discretion of the professor, an intensive study will be made of more particular trends in present day thought, such as existentialism, logical positivism, or recent developments in Thomism. Three hours. Three units.

177. American Philosophy. A survey of the main movements in American philosophy from its beginning, with particular stress on recent and contemporary trends, such as pragmatism, instrumentalism, and personalism. Three hours. Three units.

PHYSICS

Chairman of the Department

John B. Drahmann, B.S., Ph.D.

Students who wish to make Physics their major subject are required to complete in addition to general requirements for the Bachelor's degree, the following lower division courses: Physics 8, 9, and 10, Chemistry 1A-1B, and Mathematics 3A-3B, 4A-4B. A grade of C or better must be maintained in each course.

The major program must include the following upper division courses: Physics 101A and 101B, Physics 110A and 110B, Physics 120A and 120B, 150, 160 and 170. For those students intending to do graduate work, Physics 130A and 130B are recommended.

***1A. General Physics.** An introductory lecture, problem, and laboratory course dealing with the fundamental laws of mechanics, heat, and sound. Three hours lecture, three hours laboratory. Fall semester. Four units.

Prerequisites: Mathematics C and D.

***1B. General Physics.** Continuation of Physics 1A. Study of the fundamental laws of light, electricity, and magnetism. A brief survey of modern physics. Three hours lecture, three hours laboratory. Spring semester. Four units.

Prerequisite: Physics 1A.

2A. General Physics. An introductory lecture, problem, and laboratory course dealing with the fundamental laws of mechanics, heat, and sound. Three hours lecture, three hours laboratory. Fall semester.

Prerequisites: Mathematics C and D. Four units.

2B. General Physics. Continuation of Physics 2A. Study of the fundamental laws of light, electricity, and magnetism. A brief survey of modern Physics. Three hours lecture. Three hours laboratory. Spring semester.

Prerequisite: Physics 2A. Four units.

8. General Physics. A lecture and demonstration course dealing with mechanics, properties of matter and heat. A required course for chemistry, engineering and physics students. Three hours lecture, one three-hour laboratory. Spring semester. Four units.

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*These courses will not be offered after June, 1957.

9. General Physics. Study of the fundamental laws of electricity and magnetism. Three hours lecture, one three-hour laboratory. Fall semester. Four units.

10. General Physics. Lectures and laboratory work devoted to the study of light and modern physics. Three hours lecture. One three-hour laboratory. Spring semester. Four units.

****20. Principles of Optics.** A lecture course devoted to the study of geometrical and physical optics. Three hours lecture. Fall semester. Three units.

****30. Introduction to Modern Physics.** A course designed to acquaint the student with the fundamental concepts of atomic and nuclear physics. Three hours lecture.

Prerequisites: Physics 2A and 2B or Physics 8, 9, and 10; Mathematics 3A and 3B. Three units.

40. Introduction to Electronics. A lecture and laboratory course in the study of the characteristics of vacuum and gas filled tubes and elementary electronics circuits. Two hours lecture. One three-hour laboratory. Three units.

101A. Electricity and Magnetism. Lectures covering electrostatic fields in vacuo and a matter, electric charges in motion, magnetostatics and magnetic materials, magnetic fields of currents, electromagnetic forces and electromagnetic induction, electrical properties of matter. Three hours lecture. Fall semester. Three units.

101B. Electricity and Magnetism. A continuation of Physics 101A Theory of constant and time-varying currents in linear circuits, electromagnetic radiation, thermionic emission, vacuum tubes, fundamentals electronics circuits. Three hours lecture. Spring semester. Three units.

***106. Electrical Measurements.** Experimental study of fundamental electric circuit parameters and development of techniques for determination of their values. Limitations on accuracy and measurements are studied. Two hour lectures. Three hours laboratory.

Prerequisite: E.E. 125. Three units.

110A. Analytical Mechanics. A course devoted to the study of the fundamental principles of Newtonian mechanics, plane statics, plane kinematics, methods of plane dynamics, plane impulsive motion. Three hours lecture. Fall semester.

Prerequisites: Physics 2A or Physics 8, Mathematics 121 (may be taken concurrently). Three units.

110B. Analytical Mechanics. A continuation of Physics 110A. Statics and dynamics in space. Introduction to Lagrange's and Hamilton's Equations. Three hours lecture. Spring semester.

Prerequisite: Physics 110A. Three units.

120A. Atomic Physics. Magnetic, optical, and electrical properties of atoms, X-ray, special theory of relativity, wave mechanics. Three hours lecture. Fall semester. Three units.

Prerequisite: Physics 30.

120B. Nuclear Physics. Natural radioactivity, induced nuclear reactions, nuclear fission, applications of nuclear physics. Three hours lecture. Spring semester.

Prerequisite: Physics 120A. Three units.

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*These courses will not be offered after June, 1957.

**These courses will not be offered after June, 1958.

130A. Methods of Mathematical Physics. A course designed to introduce the student to the mathematical techniques used in modern day physics. Three hours lecture. Fall semester. Three units.
Prerequisites: Physics 110A and 110B, Mathematics 121.

130B. Methods of Mathematical Physics. Continuation of Physics 130A. Three hours lecture. Spring semester. Three units.
Prerequisites: Physics 130A, Physics 101A and 101B.

136. Introductory Electronics. Elements of vacuum and gas tube theory, and applications to basic electronic circuits in particular as they apply to industrial electronics. Three hours lecture. Three hours laboratory.
Prerequisite: Physics 101A. Four units.

140. Thermodynamics. A study of the laws of thermodynamics and the application of thermodynamics to pure substances and special systems. Three hours lecture. Three units.

150A. Advanced Laboratory. A laboratory course in which the student performs experiments drawn from the various areas of physics. One three-hour laboratory per week. One unit.

150B. A continuation of Physics 150A. One unit.

150C. A continuation of Physics 150B. One unit.

150D. A continuation of Physics 150C. One unit.

160. Methods of Research. For students majoring in physics. Work of a research or advanced laboratory nature which can be incorporated into the senior thesis. Credit to be arranged.

170. Principles of Optics. Lecture course devoted to the study of geometrical and physical optics. Three hours lecture. Fall semester Three units.

POLITICAL SCIENCE

Chairman of the Department
Bernard L. Kronick, A.B., Ph.D.

Students who wish to make Political Science their major subject, besides completing the other required courses of the Lower Division, must pass the courses in Political Science 1-2 with at least a grade of C. At a time to be chosen by the student a six unit course in either Economics or Sociology must be passed similarly with at least a grade of C.

The major program must include 24 units of upper division work in Political Science. Required courses include: Political Science 118A and 118B, and Political Science 159A, as well as at least one course from Groups 2, 3, and 4. An average of C must be maintained in the courses of the major and at the end of the senior year each student must pass such comprehensive examinations as will be required by the department.

Any exceptions to this program must be authorized by the written permission of the Department.

Lower Division

1-2. Introduction to Government. An introduction to the principles and problems of government, with particular emphasis on national government in the United States. This course is accepted in satisfaction of the American History and Institutions requirement. Three hours. Two semesters. Six units.

20A-20B. American Institutions. A survey of the history and constitutional development of the United States to clarify current problems of American democracy and of the principles of state and local government established under the California Constitution. Two units

Upper Division

Group 1, Political Theory and Public Law

118A-118B. History of Political Theories. Development of political thinking from antiquity to the present; major theories of man in the political community; metaphysical and moral principles underlying various conceptions of society; the relation of political speculation to cultural and institutional growth; the main concepts of political philosophy as they apply to modern issues; the role of traditional political theory in important contemporary doctrines. Three hours. Two semesters. Six units.

150. Introduction to Law. An examination of fundamental legal principles especially from the historical, philosophical and sociological points of view. Particular attention is given to modern theories of law. Three hours. Three units.

159A-159B. American Constitutional Development. A study of the development of the United States Constitution chiefly through judicial decisions. The powers and policies of the Supreme Court will be analyzed under such topics as judicial review, federalism, the tax and commerce clauses, and civil liberties. This course is accepted in satisfaction of the American History and Institutions requirement. Three hours. One semester. Three units.

Group 2, Government and Politics

141. The American Political Process. The policy making process in American government: executive-legislative relationships; tactics of political interest groups in mobilizing opinion and influencing governmental policy; efforts to assess quantitatively major variables in this process. Three hours. One semester. Three units.

147. British Politics. A study of British constitutionalism and machinery of government, and the influence which these have had on the development of the Commonwealth; the British party system, and the cultural, social and political conditions in which it is rooted. Three hours. One semester. Three units.

149A. The Politics of Democracy. A comparative approach to the governments and politics of the Western Democracies, in an attempt to describe and evaluate democracy as a practical political system for the modern world. Three hours. One semester. Three units.

149B. Government and Politics of the U.S.S.R. Rusian political evolution since 1900; the downfall of the Tsarist regime; the rise of communism; the establishment and develpoment of the Soviet system; its internal politics and foreign relations. Three hours. One semester. Three units.

152. United States Political Parties. The origin, organization and activities of political parties; campaign techniques; the spoils system; party influence on domestic and foreign policy. Three hours. One semester. Three units.

158. Government and Business. Government regulation of business as exercised especially by the Federal authority. Regulation of car-

riers; business combines; trusts, business practices, public utilities, etc. Investigation of government's regulatory machinery. Three hours. One semester. Three units.

Group 3, Public Administration

162. Municipal Government and Administration. The development of the modern city; relations of city government to other governmental units; municipal politics; types of municipal government. Current municipal problems such as city and regional planning, finance, law enforcement. Three hours. One semester. Three units.

172. State Government and Administration. The development of state constitutions; federal-state relations; politics and elections; the legislative process; the courts; county government; the organization and current major problems of the state administrative system. Three hours. One semester. Three units.

181. Principles of Public Administration. Growth of public administrative agencies; their interralations; organizations; personnel; administrative planning. Three hours. One semester. Three units.

Group 4, International Relations

124. International Organization and Administration. International unions and commissions; the League of Nations; the United Nations; other agencies of international cooperation; their character, relations and administration. Three hours. One semester. Three units.

125A. International Relations and World Politics. A survey of the origins, forms and forces of the Western State System, covering the conduct and practice of diplomacy, the structure and scope of international law, and the development and importance of international organization in modern world politics. Three hours. One semester. Three units.

125B. International Relations and World Politics. Analysis of the contemporary problems of the Western State System, stressing the concept of power politics and the balance of power, the impact of nationalism and imperialism, the conduct of the foreign policies of the major powers, the struggle for peace, and the causes of war. Three hours. One semester. Three units.

133. International Law. Introduction to the history, theory and nature of international law; analysis of the basic theories underlying the legal and juridical relations between national states as demonstrated through the writings of leading philosophers of the law of nations, through international conventions, cases decided by national and international tribunals, and other documentary materials. Three hours. One semester. Three units.

175. The United States in World Affairs. A systematic study of the principles and problems of the United States as a World Power; the basic influences shaping its foreign policy in the twentieth century; the responses of American Society to the challenges arising in the major problem areas; and the controls and strategies available to American statecraft in diplomacy and defense. Three hours. One semester. Three units.

Group 5, Special Studies

190. Research in Political Science. A course in Research methods: the formulation of practicable problems, the nature of available evidence; bibliography; presentation of findings. Supervised work for the senior thesis. One unit.

The following courses have not been offered since June, 1957.

113. American Political Thought. A study of the development of American ideas in the sphere of authority from the Puritans to the present. Three hours. Three units.

123. International Politics. The growth of the western state system; the problems of nationalism, imperialism and war. Three hours. One semester. Three units.

157. Constitutional Law. A study of the origin and growth of the federal system in the United States. The deveolpment of federal power; the rights of the states and of the citizens. Three hours. One semester. Three units.

PSYCHOLOGY

Richard J. Stanek, B.S., A.M., Ph.D.

1. Introductory Psychology. The study of man as a psychophysiological organism. A general survey of scientific psychology, dealing with neural organization and function, sensation, perception, learning, the measurement of intelligence, emotion, and feeling, volition, character and personality. Fall semester. Three hours. Three units.

22. Philosophical Psychology. Philosophical psychology as distinct from empirical psychology. Man in his unity; his sensitive, intellectual, and volitional life. Spring semester. Three hours. Three units.

100. Principles of Statistical Method. The object of this course is twofold: First, it presents the techniques of elementary statistical analysis as tools appropriate for the study of quantitative data. Secondly, it considers the logic of statistical induction and the inherent limitations imposed thereon by the nature of the data themselves. The subject matter includes averages, variation, elementary ideas of index numbers, simple linear correlation, and elementary time series analysis. Three hours lecture, three hours laboratory. Four units.

110. Psychology of Human Learning. An exploration of the methods, concepts, and phenomena of human learning. Theories and facts relating to the learning process with special consideration given to contemporary research in the major areas of learning. Spring semester. Three hours. Three units.

115. Introduction to Abnormal Psychology. A comprehensive survey of the major forms of mental disorder with regard to their etiology, nature, development and control. Current theories of mental disease. The psychology of abnormal thinking. Three hours. Three units.

117. Child Psychology. The mental, physical and social growth of the child. Development of language, mental abilities, emotional traits. Individual differences in development and performance, special problems at various age levels, personality growth throughout pre-adolescent years. Fall semester. Three hours. Three units.

118. Psychology of Adolescence. A study of physiological, psychological and social changes associated with adolescence. Attitudes, interests, ideals and adjustments of the adolescent. Casual factors in maladjustment and delinquency among adolescents. Spring semester. Three hours. Three units.

120. Psychological Tests and Measurements. Introduction to the theory and practice of psychological measurement. Test construction and standardization. Some acquaintance with the administration, scoring

and interpretation of various tests of personality, intelligence, interest and achievement. Objectivity, reliability and validity of selected, representative tests in the field. Three hours. Three units.

140. History of Experimental Psychology. The origin and development of modern psychology, its early growth in Europe and America. Analysis and evaluation of the major theoretical systems in psychology - structuralism, functionalism, behaviorism, Gestalt psychology, psychoanalysis, hormic psychology, holistic psychology. Current trends in contemporary psychological theory. Three hours. Three units.

150. Social Psychology. Introduction to social psychology. Critical analysis of inter-relationships between culture and personality. The development and functioning of the self. Interpretation of socialization. Personality in total cultures and subcultures. Recommended for Education majors. Three hours. One semester. Three units.

SPEECH AND DRAMA

Director

Robert F. Shea, B.A., M.A.

Note: For transcript purposes, all courses will be listed as Speech (Sp.).

1. Fundamentals of Expression. The fundamental principles of public speaking; the speaking voice; the body and expression movement. Practice in the basic types of speaking situations and oral reading. Two hours. Fall semester. One unit.

2. Fundamentals of Expression. A continuation of course 1 with practice in more advanced types of speaking situations; argument; persuasions, discussion; parliamentary procedure. Two hours. Spring semester. One unit.

3. Fundamentals of Expression. A short course in public speaking for students in the College of Engineering. The fundamental prinicipals of public speaking; practice in basic types of speaking situations; presentation of reports and surveys; conference techniques; discussion and conference. Two hours. Fall or spring semester. One unit.

5. Voice and Diction. The fundamental principles of voice production; a study of the basic sounds in English by means of applied phonetics; training in voice improvement and effective utterance through voice drills, oral readings, and speeches. Two hours. Spring semester. Two units.

6. Discussion and Debate. Basic practical course; emphasis upon orientation into allied disciplines of problem-solving discussion, effective use of argument in debate. Two hours. Fall semester. Two units.

10. Acting I. Study and practice in the fundamentals of acting techniques, involving the physical, mental, emotional processes by the means of the voice, imagination, and bodily movements. Two hours. Fall semester, Alternate years; offered in 1958-59. Two units.

11. Acting II. A continuation of 10 with a concentration of the area of creative techniques. Two hours. Spring semester. Alternate years; offered in 1958-59. Two units.

25. Dramatic Workshop. Credit for participation in productions in acting, stagecraft, subject to proper approval.

103. Advanced Public Speaking. Advanced study of the principles of public speaking; personal development, audience psychology, speech

composition, special types of speaking situations. Two hours. Spring semester. Alternative years; not offered in 1958-59. Two units.

105. Oral Interpretation. Fundamental training in understanding thought and feeling in literature, communicating it to an audience. Training in the analysis of various forms of poetry, prose; emphasis on techniques of oral interpretation. Two hours. Spring semester. Alternate years; offered in 1958-59. Two units.

Prerequisite: Speech.

106. Debate Workshop. Credit for participating in intercollegiate debate meets, subjects to proper approval. Both semesters. Two units.

120. Play Production. Designed for teachers and students who intend to engage in the work of producing or directing plays. Attention is given to principles and practice in designing, construction, painting, lighting, sound, make-up, and costuming. Three hours. Fall semester. Alternate years; not offered in 1958-59. Three units.

130. Survey of the Drama. Designed primarily for students of English literature to supplement their knowledge in the field of drama. It will cover representative plays from the Greeks to the present-day playwrights—the Continent, England, and America. It is intended to familarize the student with the principal dramatic forms, the development of dramatic art, and masterpieces of the theatre from various periods and countries. Three hours. Fall semester. Offered in alternate years. Three units.

135. Playwriting. The critical analysis of dramatic structure and techniques designed for the student interested in dramatic literature, play directing, or the writing of original plays for stage, radio, or television. Two hours. Spring semester.

Prerequisite: Speech and Dramatics 130. Two units.

Offered in alternate years.

140. History of the Theatre I. The development of the theatre from ancient Greece to the theatre of Elizabethan England. A history of the physical stage, performers, style and types of production, and the technical structure of the drama. Three hours. Fall semester. Alternate years; offered in 1958-59. Three units.

141. History of the Theatre II. A continuation of Speech 140. The development of the theatre from Elizabethan England to the present day. Three hours. Spring semester. Alternate years; offered in 1958-59. Three units.

RELIGION

Chairman of the Department

Reverend Joseph L. Martin, S.J., B.S.C., M.A., S.T.L.

1. General Course. This course is intended for those who have not had the usual Religion courses of secondary education. It is an objective and scientific study of religion. Using reason, it proceeds step by step along intellectual paths from the nature of religion, its obligation, God, creation, man, sin, the Redemption, the Holy Ghost, the Church, its functions, the Sacramental System and the Mass and the commandments of God and the Church.

5. The Sacraments. A study of the Sacraments of Baptism, Confirmation, Penance, Holy Eucharist, Extreme Unction, and Holy Orders—their nature and efficacy as a means of Grace. Two hours lecture. One semester. One unit.

6. The Life of Christ. The origin and literary type of the Gospels: their religious value, source book of Christian origins. The religious, political, topographical backgrounds of the life of Christ. The life of Christ and the work He came to accomplish as revealed in the Gospels. Two hours lecture. One semester. One unit.

7. The Existence and Essence of God. Belief in God, the nature of Faith. The necessity and certainty of Faith. Sources of proof of God's existence. The nature and essence of God. His attributes, Pantheism and Atheism. The mystery of the Trinity. Two hours lecture. One semester. One unit.

8. Creation. Original Justice. Original Sin. The Immaculate Conception. The general Judgment; Heaven; Hell; Purgatory. Two hours lecture. One semester. One unit.

62. An Outline History of the Church. A survey course which offers a century by century treatment of the growth of the Church from apostolic times down to the present, with special emphasis given to the Church's Councils viewed against the political and secular background of the times. Two hours lecture. One semester. One unit.

103. The Sacraments. The Sacraments as a means of Grace. The nature and efficacy of the Sacraments. Discussion of the Sacraments of Baptism, Confirmation and the Holy Eucharist. Two hours lecture. One semester. One unit.

104. The Sacraments. A continuation of Religion 103. Discussion of the Sacraments of Penance, Extreme Unction, Holy Orders and Matrimony. A discussion of Christian morality. Two hours lecture. One semester. One unit.

107. God, The Redeemer, and Redemption. The Mystery of Redemption. The incarnation. The divine and human natures of Christ. His divine and human wills. The merits of Christ. The Worship of Christ. Devotion to the Mother of God. The nature and necessity of Grace. Kinds of Grace. Two hours lecture. One semester. One unit.

108. Moral Guidance. A study of Christian principles of morality as found in the Ten Commandments and Church law. Cases illustrating these principles. Two hours lecture. One semester. One unit.

109. Fundamental Apologetics. Revelation; guarantees of Revelation. Documents of Revelation. The authenticity, integrity and reliability of the four Gospels, the Catholic Church as the Church of Christ. Its authenticity as a teaching and ruling body. The primacy of St. Peter. The nature and character of Christ's Church. The marks of the true Church of Christ. Two hours lecture. One semester. One unit.

110. The Sacrament of Matrimony. The Divine Institution, the essential properties, and the Sacramentality of Christian marriage; its blessings (children-love-holiness). The errors and vices opposed to it. Morals for the married, and the Canon law of the Church concerning marriage. Two hours lecture. One semester. One unit.

COURSES IN SACRED SCRIPTURE

11. Sacred Scripture. The Four Gospels. A word for word explanation of the text. Apparent contradictions explained and harmonized. Fall semester. Two lectures. One unit.

12. Sacred Scripture. The Pentateuch of Moses. A word for word explanation of the text. The Pentateuch is a literary unit. Its

central idea is the Covenant between Almighty God and the people of Israel. Spring semester. Two lectures. One unit.

13. Sacred Scripture. Antichrist and the second coming of Jesus Christ, as learned from Matthew XXIV, the two letters of St. Paul to the Thessalonians and the Apocalypse of St. John. Fall semester. Two lectures. One unit.

14. Sacred Scripture. St. Paul. His inner life and his exterior activities as seen in the Acts of the Apostles and in the fourteen epistles. Spring semester. Two lectures. One unit.

111. Sacred Scripture. The four major Prophets. Fall semester. Two lectures. One unit.

112. Sacred Scripture. The twelve minor Prophets. Spring semester. Two lectures. One unit.

SCHOOL OF SACRED THEOLOGY

Principal Disciplines

Dogmatic Theology

211. De Deo Uno.* A more concentrated and selective treatment of the contents of course 311. Second, Third, and Fourth Years.** Three units.

212. De Deo Trino. A more concentrated and selective treatment of the contents of course 312. Second, Third, and Fourth Years. Four units.

213. De Deo Creante et Elevante. A more concentrated and selective treatment of the contents of course 313. Second, Third, and Fourth Years. Five units.

214. De Novissimis. A more concentrated and selective treatment of the contents of course 314. Second, Third, and Fourth Years. Two units.

215. De Verbo Incarnato. A more concentrated and selective treatment of the contents of course 315. Second, Third, and Fourth Years. Five units.

216. De Beata Maria Virgine. A more concentrated and selective treatment of the contents of course 316. Second, Third, and Fourth Years. Two units.

217-218. De Gratia et Virtutibus. A more concentarted and selective treatment of the contents of courses 317-318. Second, Third and Fourth years. Both semesters. Seven units.

219. De Sacramentis I. A more concentrated and selective treatment of the contents of course 319. Second, Third, and Fourth Years. Four units.

220. De Sacramentis II. A more concentrated and selective treatment of the contents of course 320. Second, Third, and Fourth Years. Three units.

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*Courses with Latin titles indicate that the lectures and recitations in these courses are regularly and predominantly given in Latin; the examinations for these courses are likewise in Latin.

**Courses noted as given to three years, viz., second, third, and fourth are cycle courses taught every third year; those given to two years, e.g., first and second, are cycle courses taught in alternate years.

Special Disciplines

231. Catechetics. This course, required in the Bachelor curriculum, aims at a more effective instruction in religion by a theoretical and practical study of its various methods. Second, Third, and Fourth Years. One unit.

Fundamental Theology

301. De Revelatione. A study of the notion of Revelation, its possibility and suitability, the notion of miracles, their possibility, how they can be known, how they can prove the divine origin of Revelation, the canons and limitations of the historical method, the divinity and resurrection of Jesus Christ. First Year. Four units.

302. De Ecclesia. A synthetic study of the concept and reality of the Church exclusively in the light of the theological sources. The aim of the course is to construct a comprehensive theory of the nature, structure and function of the Church. First Year. Four units.

303. De Traditione. A theological consideration of the meaning of Tradition as the living transmission of Revelation through ecclesiastical media other than the written books of the Bible. First Year. Two units.

305. Introductio Generalis in Sacram Scripturam. This course deals with the biblical canon, inspiration, inerrancy, senses of Scripture, principles of interpretation, literary genres. First Year. Two units.

306. Introductio in Evangelia et Actus Apostolorum. This course treats genuinity and historical value, the formation of the Gospel tradition, textual criticism, literary and historical criticism, the Synoptic problem, Form Criticism, the Johannine problem, the literary genre of gospel, the resurrection narratives. First Year. Two units.

307. De Actu Fidei Theologicae. After an introductory survey of the Scriptural and Patristic uses of the terms **pistis** and **fides**, the elements of faith as an intellectual act are derived from the theological sources, culminating in an adequate definition of faith as that term is currently used in a Catholic theology. First Year. Two units.

Dogmatic Theology

311. De Deo Uno. A treatise on God in the unity of His nature with emphasis on His knowability by rational argumentation, the divine knowledge, providence, and the problem of predestination. Second, Third, and Fourth Years. Four units.

312. De Deo Trino. A dogmatic and speculative study of God in the mystery of His threefold personality; the history of the dogma of the Trinity; the theological exposition of the divine processions, relations, persons, missions. Second, Third, and Fourth Years. Four units.

313. De Deo Creante et Elevante. A course discussing the origin and nature of the universe, of man and of the angels; the Christian conception of the supernatural; the fall of man and its effects; original sin: its nature and effects. Second, Third, and Fourth Years. Six units.

314. De Novissimis. A study of the Last Things: Death; Judgment, particular and general; Purgatory; Hell; Heaven and the Beatific Vision; the Parousia; the Resurrection of the Body. Second, Third, and Fourth Years. Two units.

315. De Verbo Incarnato. A study of the Incarnation: reality, need and nature; the Divinty and Humanity of Christ; the Hypostatic Union and its implications; the unique characteristics of the Incarnate

Word; the Atonement; Christ as Priest, Prophet, and King. Second, Third, and Fourth Years. Six units.

316. **De Beata Maria Virgine.** Mariology, its nature and purpose; Mary as virginal Mother of God; the Immaculate Conception; the Assumption; the function of Mary in the divine plane of man's redemption. Second, Third, and Fourth Years. Two units.

317-318. **De Gratia et Virtutibus.** The theology of divine grace: justification, its nature and effects; habitual (created) and uncreated grace; necessity of grace; supernatural merit; actual grace, its nature, relation to human will, distribution; the infused virtues with emphasis on the theological virtues of faith, hope, and charity. Second, Third, and Fourth Years. Both semesters. Eight units.

319. **De Sacramentis I.** An historical, dogmatic, and speculative treatise on the Seven Sacraments in general and on the Sacraments of Baptism, Confirmation, and the Holy Eucharist in particular. Second, Third, and Fourth Years. Four units.

320. **De Sacramentis II.** An historical, dogmatic, and speculative treatment of the remaining four Sacraments, viz., Penance, Extreme Unction, Holy Orders, Christian Matrimony. Second, Third, and Fourth Years. Four units.

Sacred Scripture

321. **New Testament I — The Gospels.** Synoptic Gospels: discussion of certain major problems; exegesis of some of the more difficult passages, e.g., eschatological sermon. The Johannine Corpus: a presentation of the main features of the Fourth Gospel, including the Johannine Epistles, which merit for the author the title "Theologian". The exegesis of selected passages emphasizes especially the Johannine portrayal of Jesus Christ, the God-Man. Third and Fourth Years. Three units.

322. **New Testament II—Acts of the Apostles and Pauline Epistles.** The Pauline Corpus I: an introductory survey of the Acts of the Apostles, which considers the beginnings of the Church, the early persecutions and dogmatic controversies, and the labors and character of St. Paul; scientific exegesis of selected passages from Romans, Galatians, I Corinthians, Ephesians and Colossians, emphasizing the special contribution of St. Paul to the various theological treatises. Third and Fourth Years. Three units.

323. **New Testament III—Pauline Epistles.** The Pauline Corpus II: two epistles are studied: The Epistle to the Hebrews: problems of style and authorship; Alexandrian influence; relation to the Johannine Catechesis; exegesis of those passages especially, which develop the theme of the Priesthood of Christ. Epistle to the Philippians: purpose and place of origin; exposition of selected passages. Third and Fourth Years. Three units.

325. **Old Testament I—Historical Books.** The Pentateuch; Joshua—2 Kings. The course studies the problem of the origin of the Pentateuch, surveys Pentateuchal criticism, examines the date and character of the J, E, D, P traditions. Detailed examination of sections in Gn 1-11; survey of the patriarchal period. History of Israel from the Exodus to the Exile; origin and character of Mosaic religion. Third and Fourth Years. Three units.

326. **Old Testament II—Prophetical Books.** Major and Minor Prophets; History and Literature to the end of the Persian Period. Contents of the course include the origin and character of Israelite prophetism;

a detailed study of selected sections of the great pre-exilic literary prophets, the message of these prophets. Examination of the prophets of the Exile; the problem of the "Servant Song". History of the post-exilic reconstruction; survey of the post-exilic literature and the character of post-exilic Jewish religion. Third and Fourth Years. Three units.

327. Old Testament III—Didactic Books. Wisdom Literature; Daniel; Psalms; Deutero-canonical Books. After an historical survey of the history of Judaism from Alexander the Great to the beginning of the Roman period, the course studies: the origin and character of Israelite wisdom with detailed examination of selected sections; the message of Daniel and the origin and nature of Jewish apocalyptic; the literary types in the Psalter and selected Psalms for detailed examination. Third and Fourth Years. Three units.

Moral Theology

331-332. Theologia Moralis I. This course comprises three general parts. The first deals with the fundamental principles of morality: human acts, their freedom, imputability, obstacles; conscience, its binding force, probabilism; sin and vice. The second part treats of the theological virtues and various particular obligations of the faithful, clerical and lay. The third part treats of the First, Third, Fourth, Fifth, Seventh and Eighth Commandments of the Decalogue, with special emphasis given to the questions on justice, rights, injuries, principles of restitution, contracts. First and Second Years. Both semesters. Ten units.

333-334. Theologia Moralis II. This course likewise falls into three general divisions. The first section covers the Second and Sixth Commandments of the Decalogue and the question of the correct use of marital rights. The second deals with the Sacraments in general. The last section is a treatise on the Seven Sacraments in particular. First and Second Years. Both semesters. Ten units.

Canon Law

335. Ius Canonicum I. This course is designed to cover the general norms of Church Law; the notion of ordinary and delegated powers; the rights, privileges, and obligation of clerics; and certain questions regarding religious men and women. First and Second Years. Three units.

337. Ius Canonicum II. This course treats of ecclesiastical legislation on sacred times and places, divine worship, ecclesiastical teaching, and temporal goods of the Church; and handles at length the legislation on deliquencies and penalties. First and Second Year. Three units.

351. Church History I. This course is a survey of the first millenium, 30 A.D. to 1060 A.D. Special attention is given to the spread of Christianity, the persecutions, the early Councils of the Church, the origin and spread of monasticism, Charlemagne and his reorganization of State and Church, the condition of the Church and Papacy during the Dark Ages. First and Second Years. Three units.

352. Patrology. The aim of this course, which deals with the writings of the early Church Fathers, is to give in the form of literary history a general introduction to Patristics and thus serve the theologian in the correct use of patristic argumentation. First and Second Years. One unit.

353. Church History II. The course surveys the second millenium and is divided into two parts. The first part treats the medieval Church

from the Cluniac reform to the end of the fifteenth century; the second part deals with the period from the rise of Protestantism and the Catholic Reform of the sixteenth century to the present day. First and Second Years. Four units.

Auxiliary Disciplines

341. **Biblical Hebrew.** This course is designed towards a better understanding of the canonical books of the Old Testament, most of which were originally written in the Hebrew tongue. The emphasis is on the essentials of Hebrew grammar, the acquisition of a sufficient vocabulary and the peculiar modes of semitic expression, all of which are to be obtained chiefly through the reading of select passages in the Hebrew Old Testament. First and Second Years. Three units.

343. **Biblical Greek.** The purpose of this course, which presupposes previous study and a certain facility in Classical Greek, is to enable the theological student more easily to read the original text of the sacred books, especially the New Testament, and to handle the language with greater competency in scriptural exegesis and in the other theological disciplines. The course stresses the morphological and syntactical differences between the biblical and classical language. First and Second Years. One unit.

361. **Oriental Theology.** This course treats the historical background and present status of the various dissident Oriental Churches in order to understand better both the nature of the present problem of reunion, and the ways and means to foster reunion. Since a scientific inquiry into the doctrinal points of difference is given in the various sections of Dogmatic Theology, the emphasis here is rather on familiarization with Oriental theological method, rites, attitudes, customs, etc., aiming at a better practical understanding of the current status of the problem. Third and Fourth Years. One unit.

365. **Liturgy.** Using for the most part the historical approach, the liturgy course treats the Sacraments and other rites of the Church in order to give a better understanding of the function that the liturgy performs in the work of the Church, and of the meaning of the various rites. Third and Fourth Years. One unit.

367. **Ascetical Theology.** This course, presupposing the student's many years of practice and theoretical study in asceticism, has for its goal a concise, scientific, and systematic exposition of the nature of spiritual perfection, the means to acquire it, and the obstatacles which stand in its way. Third and Fourth Years. One unit.

Special Disciplines

371. **Advanced Hebrew.** This course presupposes the preliminary treatment of grammar and syntax, and undertakes further readings in the original text. The aim of the course is a deeper understanding of the biblical text and a consciousness of semitic literary forms and psychology. Two units.

373. **Advanced Biblical Greek.** A sight reading course of selected New Testament documents, with primary emphasis on linguistics. Two units.

380. **Speech Composition and Presentation.** Audience analysis, analysis of structure and form, organization of material, basic voice and bodily action for speech. First Year. One unit.

381. Advanced Public Speaking and Oral Interpretation. The development of techniques of analysis and presentation for reading aloud, the application of the principles of speaking and reading to a variety of forms. Speech and sermon situations. Second Year. One unit.

395. Pulpit Forms and Techniques. Sermon composition, the various sermon patterns, and presentation of sermons written. Third Year. One unit.

396. Research Speech Seminar. Projects in the theory of speech as applied to varied sermon problems. Elective course for Fourth Year. Two units.

398. Ecclesiastical Rites. A course of special instruction and practice in the rubrical administration of the Sacraments and in the manner of saying Mass and performing other sacred functions. Third Year. One unit.

The Seminar (399)

The Licentiate Curriculum Seminar is a group research project under the direction of a professor whose purposes is the formation of the students in the method of scholarly investigation and in the art of communicating the findings of research through writings and other media. The normal conduct of the seminar involves the selection of a single theme or topic, the various aspects or divisions of which are distributed among the individual participants for their investigation. The findings of each are critically discussed and evaluated by all in the group meetings. To show his competence for scholarly work in the field each participant is obliged to submit a paper written on some aspect of the general theme of his seminar.

Seminars are offered in the various disciplines of the curriculum. Recent seminar projects have included: Patristic Doctrines on the Sacraments; Marriage Counselling; Modern Religious Sects and Societies; Medico-Moral Problems; Old Testament Messianism.

Seminar papers of greater merit and significance are published in **Alma Studies, A Theological Review**, a semi-annual publication of the students of Alma College.

SOCIOLOGY

Witold Krassowski, B.Sc., M.S.

Students who wish to make Sociology their major subject, besides completing the other generally required courses of the lower division, must pass courses in Sociology 1 and 2 with at least a grade of C. It is recommended that when possible, Philosophy 41A and 41B be included among the courses elected.

The major program must include twenty-four units of upper division work in Sociology including Sociology 100, 105, 125, 132 and 150. At a time to be chosen by the student, a six unit course in each of two related fields of social science must be elected with the advice and the approval of the Chairman of the Department. The student must maintain at least an average grade of C in the courses of the major and, at the end of the senior year, must pass a comprehensive final examination.

LOWER DIVISION COURSES

1. Principles of Sociology (I). A study of basic elements of sociological analysis. Consideration of social organization, culture, socialization, primary groups, stratification, etc. An introduction to the study

of society, social processes, social problems, and social institutions. Three hours. One semester. Three units.

2. Principles of Sociology (II). Investigation of specialized areas of sociological inquiry. Comprehensive analysis of areas in the sociology of the family, industry, minority groups, urban sociology, criminology, and the sociology of political processes. Three hours. One semester.

Prerequisite: Sociology 1 or consent of the instructor. Three units.

UPPER DIVISION COURSES

Group 1: Social Theory and Methods

100. Principles of Statistical Method. The object of this course is twofold: First, it presents the techniques of elementary statistical analysis as tools appropriate for the study of quantitative data. Secondly, it considers the logic of statistical induction and the inherent limitations imposed thereon by the nature of the data themselves. The subject matter includes averages, variation, elementary ideas of index numbers, simple linear correlation, and elementary time series analysis. Three hours lecture, three hours laboratory. Four units.

105. Introduction to Methods in Sociology. Study of methodological problems and technical procedure involved in the selection and definition of problems of investigation. Selection, description, classification, and analysis of data. Three hours. One semester. Three units.

125. Contemporary Sociological Theory. A critical analysis of contemporary sociological theories. Inter-relationships between theory and research; theory formation. Functions of theory. Theories of the middle range. Future trends in sociological theory. Three hours. One semester.

Prerequisites. Sociology 1, 100, 105. Three units.

Group 2: Social Structures and Social Psychology

132. Social Stratification. Study of social classes in local communities and the nation. Inter-cultural comparisons of class structures. Analysis of recent occupational trends. Social problems of occupational stratification. Three hours. One semester.

Prerequisite: Sociology 1 or consent of the instructor. Three units.

147. Sociology of Industry. The study of work groups and work relations; the role the worker plays in work groups; the social organization of work plant society. Bureaucracy; study of formal and informal organizations. Union and management in an industrial society; industrial conflict. Major problems of applied industrial sociology. Theories of labor and management. Three hours. One semester.

Prerequisite: Sociology 1 or consent of the instructor. Three units.

150. Social-Psychology. Introduction to social-psychology. Critical analysis of inter-relationships between culture and personality. The development and functioning of the self. Interpretation of socialization. Personality in total cultures and subcultures. Three hours. One semester.

Prerequisite: Sociology 1 or consent of the instructor. Three units.

160. Criminal Behavior. Crime as a social phenomenon. Theories in criminology; etiology of crime. Typology of crimes. Criminal behavior and social institutions. Penal systems and penal policies. Recidivism and rehabilitation; crime prevention. Recommended for pre-law students and Education majors. Three hours. One semester.

Prerequisite: Sociology 1 or consent of the instructor. Three units.

Group 3: Community Life

110. Minority Groups. Study of ethnic and racial minorities. Inter-ethnic tensions, race ideologies, significance of identification marks. Multi-ethnic status system. Acculturation, amalgamation, and the policies of ethnic pluralism. Three hours. One semester.

Prerequisite: Sociology 1 or consent of the instructor. Three units.

130. The Family. Comparative analysis of family structures. Study of the family as process and institution. Dating behavior, marriage, child-rearing, and marital dissolution. Marriage counseling and prediction and measurement of marital and family adjustment. Three hours. One semester.

Prerequisite: Sociology 1 or consent of the instructor. Three units.

Special Studies

198. Thesis Research. Supervised work for the senior thesis. One unit.

The following courses have not been offered since June, 1957.

109. Sociological Theories. A study of the most important schools of thought and their representatives. Survey of major attempts in the history of ideas to understand the nature of man and society. Three hours. One semester. Three units.

118. Social and Cultural Anthropology. An introduction to the study of the social organization and culture of primitive societies with emphasis on their functional relationship. A survey of cultural phenomena including material culture, religion, language, and other topics. Three hours. One semester. Three units.

SPANISH

See "DIVISION OF FOREIGN LANGUAGES"

EVENING DIVISION COURSES

The following courses which are offered at night do not lead to a degree and do not require definite college preparation. If a student desires college credit for these courses refer to page 84.

Students who desire to work for a degree in Economics must fulfill University entrance requirements as well as degree requirements listed on page 60 or page 64, titled "Upper Division."

A certificate in Business Administration will be offered to those students who complete satisfactorily 36 units of required college work in the Evening Division at Santa Clara. The makeup of these units will depend upon the field of major emphasis selected but must include courses in Introduction to Business, Principles of Economics, Marketing, Accounting, and Business Ethics.

Business Administration

10A. Principles of Accounting. A study of the basic principles underlying modern accounting processes with particular emphasis upon their application to the technique of classifying and recording actual business transactions. Three units.

10C. Accounting Laboratory. Accounting laboratory material related to Principles of Accounting 10A. One unit.

10B. Principles of Accounting. A continuation of 10A. Special attention is given to the problems peculiar to the sole proprietorship,

partnership and corporation. Elementary ideas on the problems of asset valuation are also discussed. Three units.

10D. Accounting Laboratory. Accounting laboratory material related to Principles of Accounting 10B. One unit.

11. Introduction to Business. The purpose of this course is to give the students a working knowledge of the management of business enterprises. The student is trained in methods of identifying and evaluating the influences upon a business enterprise, and is given a comprehensive view of modern practices of planning, organizing, and controlling activities in business. Three units.

16A. Mathematics of Finance. Algebraic computations; use of equations in bonus and tax problems and in the determination of simple interest and discount. Three units.

16B. Mathematics of Finance. A continuation of B.A. 16A. Actuarial science; compound interest, amounts, and present values; nominal and effective interest rates, sinking fund computations; debt amortizations; bond valuations at yield rates. Three units.

40. Business Statistics and Forecasting. The prime purpose of this subject is to develop critical judgment in the student with regard to statistical information and to acquaint the student with the practical application of business statistics. The work covers the proper methods used in the collection, presentation, analysis, and interpretation of data as a basis for forecasting future business policies. Three units.

40C. Statistics Laboratory. A laboratory workshop in which the material developed in Business Statistics 40 is applied to problems and business cases. One unit.

121. Finance. An introduction to the problems surrounding the procurement of funds needed for carrying on a modern business enterprise. Topics covered will include: financial organization of modern industry; the instruments of enterprise finance; promotion and sale of securities; financing of operations of the going-concern; problems of financing growth and expansion; financial readjustments. Three units.

124. Investments and Investment Institutions. As Corporation Finance deals with the problems of business management division ways and means of procuring funds for enterprise operations, so this course will deal with the market for funds as viewed by those individuals and institutions who are offering those funds in that market. Therefore, among the subjects to be considered will be in the nature of the money market; institutions operating therein; and because of the significance of the presence of government, government control thereof. It will be presumed that a student electing this course possesses a working knowledge of commercial and central bank operations and of the fundamentals of enterprise finance. Three units.

125. Problems in Finance. A detailed analysis of specific problems in corporation finance. The background and needs of those enrolling will determine the specific topics covered. Three units.

126. Personal Finance. "The business management of personal finance problems." A new approach to the field of personal financial management with special emphasis on the use and control of credit, including the rights of credit grantors and grantees. Legal aspects of installment and other secured contracts will be reviewed. Principles and methods of personal and home finance will be discussed, including methods of financial control. Three units

130. Accounting Valuation. A study of the theory and technique applied in the valuation of assets and liabilities in the preparation of private enterprise balance sheets and profit and loss statements. Consideration will also be given, where appropriate, to the similarities and differences between the accountants' problem of valuation and the economists' problem of value. Three units.

130C. Accounting Laboratory. Accounting laboratory material related to Accounting Valuation 130. One unit.

131. Accounting Proprietorship. Problems arising from the existence of more than one proprietor in an enterprise will be discussed as well as techniques and theory underlying the accounting for interests in the net worth of an enterprise and changes therein. About one-third of the course will be devoted to partnerships and the remaining two-thirds to corporations. Three units.

131C. Accounting Laboratory. Accounting laboratory material related to Accounting Proprietorship 131. One unit.

132A. Accounting Problems. The theory and technique underlying the preparation of statements for certain situations will be discussed and illustrative problems solved. Among the topics discussed will be bankruptcy, installment sales, branch accounting, estates and trusts, and public accounts. Other special problems by arrangement with the instructor. Three units.

132C. Accounting Laboratory. Accounting laboratory material related to Accounting Problems 132A. One unit.

132B. Accounting Problems. Continuation of 132A with emphasis on parent and subsidiary accounting. Three units.

132D. Accounting Laboratory. Accounting laboratory material related to Accounting Problems 132B. One unit.

133A. Cost Accounting. A study of the problems involved in recording the internal transactions of modern business enterprise, for use by management in control of activities. Particular emphasis is on industrial concerns but application to trading concerns, both wholesale and retail, are discussed. Particular topics include the determination of unit product costs, departmental costs, allocation of overhead, standard costs and budgetary control. Three units.

133C. Accounting Laboratory. Accounting laboratory material related to Cost Accounting 133A. One unit.

133B. Cost Accounting. A study of the problems involved in recording the internal transactions of modern business enterprise for use by management in control of activities. Particular emphasis is on the determination of unit product costs, departmental costs, allocation of overhead, process costs, standard costs, and budgetary control. Three units.

133D. Accounting Laboratory. Accounting laboratory material related to Cost Accounting 133B. One unit.

135. Analysis of Financial Statements. This course is concerned with the interpretation of the statistical significance of the numerical data compiled from accounting and supplementary records. Emphasis is placed upon statistical interpretation of the typical financial statements and interim reports prepared for the use of management. Three units.

137. Auditing. This course covers both theory and practice of auditing, discussion being supplemented with problems, questions, specimen working papers applicable to balance sheet audits, and laboratory work illustrating audit procedure. Auditing procedure involved in connection with cash and cash funds, receivables, inventories, investments, deferred

charges, capital assets, intangible assets, liabilities, both actual and contingent, accounts showing net worth, closing of an audit, and preparation of audit reports. Three units.

138. Income Taxation. This course presents the underlying principles of income taxation and the special accounting and management problems involved in the determination of tax liability. The course develops the concept of taxable income and deals with special problems of individuals, partnerships, trusts, and corporation income taxes. Three units.

139A. Advanced Accounting. Corporations; funds and reserves; profit and loss analysis; statement of application of funds; consignments; installment sales. Three units.

139C. Accounting Laboratory. Accounting laboratory material related to Advanced Accounting 139A. One unit.

139B. Advanced Accounting. Continuation of 139A. Three units.

139D. Accounting Laboratory. Accounting laboratory material related to Advanced Accounting 139B.

141. Budgeting. A study of the preparation and the use of business budgets. Work in the course consists of the preparation of sales, production, materials, overhead, selling expense, and cash budgets which are assembled in a complete budget. Three units.

142A-142B. Fund Accounting. The theory and techniques underlying the record keeping and report preparation for governmental units and institutions such as hospitals, schools, foundations, etc. Six units.

143. Managerial Accounting. Its objective is an understanding of accounting and accounting reports as tools for management. Three units.

148. Principles of Insurance. A survey course to acquaint the student with the general principles of insurance and their application to the various branches of the field. Emphasis is placed on typical fire, automobile, liability, accident, health, and workmen's compensation contracts. Designed to assist those who will use insurance services in business. Three units

150. Life Insurance. Studies of the nature, and of the business and personal uses of life insurance and annuities; contracts; policy conditions; selection of risks; types of carriers; mathematical bases; group, wholesale, and industrial insurance; organization, management, regulation, taxation, and investment policy of legal reserve companies. Three units.

155A. (L-1E). Business Law. The nature and purpose of law and the historical development and its functions with emphasis on Contracts, Agency and Sales, Bailments and Carriers, and Property. Three units.

155B. (L-2E). Business Law. Continuation of Business Law 155A with emphasis on Negotiable Instruments, Partnerships, Corporations, Bankruptcy, and Real Estate. Three units.

156A. Real Estate Law. The fundamental principles of law generally facing those in real estate and business operations. A case study course emphasizing real property law; real estate contracts; transfers of real estate, including various forms of deeds, trusts, sales, and recordation. Three units.

156B. Real Estate Law. A continuation of Real Estate Law 156A. Three units.

157A. Transportation Law. Fundamentals of bailments and carriers contracts, agency and other transportation laws upon which traffic regulations and claims are based. Procedures followed in handling losses, damages and overcharge claims, reparation, and complaints. Three units.

157B. Transportation Law. Continuation of Transportation Law 157A. Three units.

158A-159B. Labor Law. This course emphasizes the administration of labor policy. It covers wages, hours, conditions of work, employment, industrial relations, labor unions, unfair labor practices including both employees' and employers' rights, bargaining, strikes and picketing, and wage-hour controls. Reference will be made to the National Labor Relations Act. While leading court decisions will be discussed, primary focus will be on the practical application of labor laws to labor management relations. Six units.

160. Industrial Organization and Management. The purpose of this course is to give the student a working knowledge of fundamental principles underlying the management of business enterprises. The student is trained in methods of identifying and evaluating the influences upon a business enterprise, and then is given a comprehensive view of modern practices of planning, organizing, and controlling various functional activities in business. Three units.

161. Office Management. The course includes a discussion of the application of modern management principles and practices as applied in the organization, operation, and control of office functions. Deals specifically with the planning, scheduling, measurement of work, use of labor-saving appliances and methods, office services, costs, budgets, and the selection, training and supervision of workers. Three units.

161C. Office Management Laboratory. A laboratory workshop in which the material developed in Office Management 161 is applied to problems and business cases. One unit.

162A. Business Policies and Management. The purpose of the course is to develop the ability to apply economic analysis to the solution of the individual firm's problems and to study the effect of such decisions on the economy as a whole. Included is a study of the principles involved in policy formation and the problems embodied in establishing responsibilities for the executive. Three units.

162C. Business Policies and Management Laboratory. A workshop using material related to Business Policies 162A. One unit

163. Production Control. The problem of the production of goods. Factors which aid modern productivity. Coordination of sales and manufacturing. Organization for production control. Research. Budgets. Materials. Machine replacement. Methods and standards. Planning and routing. Operation and instruction sheets. Centralized control of production. Inspection. Measures of factory performance. Three units.

163C. Production Control Laboratory. A laboratory workshop in which the material development in Production Control 163 is applied to problems and business cases. One unit.

165. Retailing. A study of the organization and management of retail establishments. Among the topics discussed will be store location; organization; policies; sales systems; profit; turnover; buying; the physical control of inventories; personnel; statistics; summaries for management control. Three units.

165C. Retailing Laboratory. A laboratory workshop in which the material developed in Retailing 165 is applied to problems and business cases. One unit.

166. Personnel Management. The purpose of this course is to give the students a thorough knowledge of the principles of scientific management and the ability to recognize the limitations and uses of the tools

and mechanism of management. Throughout the course, such management devices as present-day industrial tendencies, labor maintenance and control, wage payment and wage incentives, inspection, and cost analysis are studied as aids in clarifying and solving management problems. Three units.

167. Purchasing. The procurement of materials, equipment and supplies in industrial, merchandising, governmental and institutional organizations are discussed. Topics covered include the scope of the purchasing function, purchasing procedure, quality control, quantity control, sources and assurance of supply and price policies. This course is designed for people in the industrial, wholesale, and retail fields. Three units.

167C. Purchasing Laboratory. A workshop using material related to Purchasing 167. One unit.

168. Administrative Practices. A study of cases on human relations in business. The objective of the course is to increase each individual's ability to work effectively with others. These "others" may be superiors, equals, or subordinates. The purpose of this work is to provide each student with an attitude which will make him a more responsible member of an organization, whatever his capacity. Three units.

169. Retail Merchandising and Sales Promotion. An analysis and discussion of current retail business activities and trends with emphasis on steps to stimulate reaction to merchandising and sales promotion efforts on a buyer's market. Leaders in the field will present actual current problems and solutions for consideration. Three units.

181. Principles of Marketing. The nature and importance of marketing; nature of producer and consumer; extent of and forces behind markets; marketing functions; cooperative marketing; methods and channels of distribution; the transportation problems connected with marketing; market price; government authority; trends in present marketing methods and policies. Three units.

181C. Marketing Laboratory. A laboratory workshop in which the material developed in Marketing 181 is applied to problems and business cases. One unit.

182. Marketing Problems and Cases. The specific case approach is used to analyze the problems of consumers, stimulation of demand, sales promotion and advertising programs, merchandising techniques and brand policies, planning of sales programs and pricing. Three units

Prerequisite: Marketing 181 or equivalent.

182C. Marketing Laboratory. A workshop using material related to Marketing 182. One unit.

183. Principles of Transportation. An economic analysis of the principle forms of commercial transportation in the United States. The particular problems of rail, water, motor, air, and pipe line transportation are considered. Three units.

184A. Advertising. An analysis of advertising and its main fundamentals, including copy, layout, production, media, campaigns, and operation of Advertising Departments and Agencies. Three units.

184B. Advertising. Continuation of 184A. Three units.

185. Salesmanagement. This course in Salesmanagement provides the necessary background material for men and women who plan to follow a career in sales. Some of the topics which will be discussed include: Sales Planning—Routing of Salesmen and Sales quotas, Product Planning and

Product Research, Choice of Distribution Channels; Prices and Terms of Sale; Programs and Sales Promotion; Sales Department Organization, Selection, Training, Compensation, and Management of the Sales Force, Inventory Policy and Control; Sales Costs and Budgets; Sales and Market Research. Three units

186. Salesmanship. Personal qualifications of the salesman; evaluating the needs of the prospective buyer; locating prospects; securing sales interviews; methods of arousing interest; analyzing different types of customers; how to deal with them; conducting sales demonstrations; answering objections; securing action; maintaining customer good-will. Three units.

187. Introduction to Traffic Management. Only those people possessing a broad knowledge of traffic in all its phases are capable of solving the modern problems of carriers and shippers. This is a fundamental course in freight classification, freight movement and routing, handling and storage, and shipping papers, based on practical experience with many constructive transport suggestions. Three units.

188. Traffic Management: Freight Classification and Tariffs. Types of freight tariffs; manner of publication; how to find rates between points; principals governing the interpretation of all freight tariffs; introduction to truck rates. Three units.

189. Traffic Management: Freight Rates. Studies in the use of tariffs governing the shipment of carload and less than carload freight; pickup and delivery rates and rules; study of tariffs and rates applying between California and other points in the West using both rail and truck tariffs. Three units.

190. Traffic Management: Motor Truck Rates. Types of trucking services; Interstate Commerce Commission and State regulation, obligations, rights and privileges of highway carriers and their shippers; analysis of rate decisions; problems in the computation of freight charges on traffic; freight rate structure for contract motor trucks and radial highway common carriers. Three units.

197. Newspaper Advertising. A complete study of preparation, potentialities and techniques of newspaper advertising for this area's advertisers. Plant tours, talks by newspaper, and advertising personnel, plus actual ad preparation will be featured in this course. Course is tailored to needs of advertisers of all types. Three units.

198. Public Relations and Publicity. Two of today's modern tools in molding public thinking are reviewed in this course that employs actual problems from business, industry ,and organizations, to show the proper techniques used in their solution. The principles of public relations, publicity, and journalism are combined to forge an effective business tool. Three units.

199A. Business Research and Analysis. The scope and importance of Business and Sales analysis and planning; types of research, collecting and analyzing data; presenting and interpreting results. Three units.

Economics

1A. Principles of Economics. The student is made acquainted with the general principles, terminology and methods of analysis essential to an understanding of economic processes and problems. The work of the course centers around the four dominant phases of economics; consumption, production, exchange, and distribution, Three units.

1B. Principles of Economics. Continuation of Economics 1A. Three units.

100. Principles of Statistical Method. The object of this course is twofold: Firstly, it presents the techniques of elementary statistical analysis as tools appropriate for the study of quantitative data. Secondly, it considers the logic of statistical induction and the inherent limitations imposed thereon by the nature of the data themselves. The subject matter includes averages, variation, elementary ideas of index numbers, simple linear correlation and elementary time series analysis. Three units.

100C. Laboratory. A laboratory workshop in which the material developed in Business Statistics 100 is applied to problems and business cases. One unit.

120. Public Finance and Taxation. A course devoted to the analysis of public expenditures and public revenues. In the case of expenditures, particular emphasis will be placed on the change in the qualitative nature of those expenditures when commanded by government and the effects of such changes on the private economy. The section of the course devoted to public revenue will consider taxes peculiar to the United States in such a way as to determine the ultimate bearers of the burden of those taxes. Three units.

121. Corporate Finance. An introduction to the problems surrounding the procurement of funds needed for carrying on a modern business enterprise. Topics covered will include: financial organization of modern industry; the instruments of enterprise finance; promotion and sale of securities; financing of operations of the going-concern; problems of financing growth and expansion; financial readjustments. Three units.

122. Money and Banking. An analysis of the fundamental concepts of money. The discussion of money will be followed by an analysis of commercial banking principles. Emphasis will be placed upon the commercial bank as a "manufacturer of the means of payment." The discussion of commercial banking will, of necessity, entail consideration of the philosophy, technique and policy of central banking. Mindful of the fact that the United States possesses a monetary and banking system peculiar to itself, consideration will be given to "money of the United States," the National Banking System and the Federal Reserve System, whenever possible or necessary. Three units.

124. Investments and Investment Institutions. As Corporation Finance deals with the problems of business management devising ways and means of procuring funds for enterprise operations, so this course will deal with the market for funds as viewed by those individuals and institutions who are offering those funds in that market. Therefore, among the subjects to be considered will be the nature of the money market; institutions operating therein; and because of the significance of the presence of government, government control thereof. It will be presumed that a student electing this course possesses a working knowledge of commercial and central bank operations and of the fundamentals of enterprise finance. Three units.

128. Business Cycles. An introduction to the analysis of fluctuations in the level of general business activity. Specific theoretical formulations explaining business cycles will be discussed. This will be followed by a discussion of the history of business fluctuations, the problems of control and the attainment of stability. Three units.

128C. Business Cycles Laboratory. A laboratory workshop in which the material developed in Business Forecasting 128 is applied to problems and business cases. One unit.

150. Labor Problems. Lectures and class discussion on (1) the problems: insecurity, wages and income, hours and work periods, substandard workers, industrial autocracy; and (2) attempts to solve them: by employees, by employers, by government. Three units.

158. Government and Business. This course deals with the general problem of government regulation of business as exercised especially by the Federal authority. It analyzes the regulation of Trusts and Business Combines; Business Practices; Production; Labor; Agriculture; Public Utilities, and the like. It investigates the government's regulatory machinery and enters into an analysis of methods whereby competition is either restricted or encouraged, and other government's economic objectives are achieved. Three units.

183. Transportation. An economic analysis of the principle forms of commercial transportation in the United States. The particular problems of rail, water, motor, air, and pipe line transportation are considered. Three units.

Engineering

1. Industrial Electronics. The purpose of this course is to provide practicing electricians, technicians and plant engineers with a background in industrial electronics. The course will include Vacuum Tubes and their characteristics, Circuit Elements, Meters and the Oscilloscope, Rectifier Circuits, Amplifiers, Phase Shift circuits, Timing and A-C Control Circuits, Motor Control, and A-C Relays. Two units.

2. Industrial Electronics. A continuation of Industrial Electronics 1. Two units.

3. Advanced Industrial Electronics. Basic and advanced theory of electronic circuits as well as detail specific industrial electronic devices. Two units.

4. Advanced Industrial Electronics. A continuation of Advanced Industrial Electronics 3. Two units

English

1E. Effective Communication. Seminar in the principles of "good English." Everyday problems of English will be discussed in relation to informal and formal speech and writing. By emphasizing the potentialities of Modern English rather than the prohibitions of the older grammarians, this course is aimed at giving the mature student confidence in his use of spoken and written language. Attention will be centered especially on the best current practice in business communications. Three units.

2E. Effective Communication. Continuation of 1E, with emphasis on the best current practice in business communications. Three hours lecture. One semester. Three units

3E. Efficient Reading. The purpose of this course is to improve reading ability by increasing speed, comprehension, and critical power. The method of instruction, based on the need of business and professional people for faster and clearer communication, encourages the development of reading skills through principles of rhetoric and psychology. Two units.

Philosophy

16E. Ethics. A survey of General and Applied Ethics. This emphasizes the practical application of ethical principles to personal, social, domestic, political, and business problems. Three units.

17P. Problems of Philosophy. A course designed to introduce the student to philosophy by discussion of some of the fundamental problems that have always been of interest to mankind. What is knowledge? What is truth? Can we be certain that our knowledge is true? How does the mind make contact with the external world? How trustworthy is human reason? How does the human mind function in acquiring and organizing knowledge? **Two units.**

20P. Philosophy of Being. The problem of the one and the many, the structure of being, the transcendental order, the four causes, and God as the cause of being. The being and nature of God in so far as they are knowable by natural reason. Two units.

22P. Philosophical Psychology. The philosophy of man. An analysis of the nature and operations of man so far as these natures and operations can be discovered by the use of philosophical principles and empirical observations. The course will conclude by placing philosophical psychology in the hierarchy of sciences and by indicating the importance of the subject in the field of ethics and the social sciences. Two units.

Public Speaking

1E. Public Speaking. Seminar in Composition and Delivery based on Modern Theory and Practice. This course is aimed at building up confidence and ease in the communication of ideas to an audience. Classroom work will be mainly criticism of students' speeches: from these criticisms the principles of composition and delivery will be illustrated and explained. Approximately ten speeches will be required from each student each semester. Two units.

Add: Management Center – Dr Trickett
Coll of BA Associates – Dr. Hadley
(Research)

THE OBSERVATORY

ASTRONOMICAL, METEOROLOGICAL AND SEISMOLOGICAL OBSERVATORY

John Anthony Weber, S.J.
Director

The Astronomical and Meteorological Observatories were under the immediate direction of the late Father Ricard, known throughout the country as the "Padre of the Rains." In recognition of the work of Father Ricard, the Knights of Columbus of California built the Knights of Columbus Ricard Memorial Observatory, which provides the facilities and equipment for a much more comprehensive investigation of astronomical and meteorological problems, and a correspondingly greater service to the country.

Through its Seismological Station the University is a member of a chain of seismological stations maintained by the Jesuits throughout the world, and has been a pioneer on the Pacific Coast in the recording and observation of seismological disturbances, as well as in the study of their causes.

The University Seismological Station contains an underground passageway which connects the vault of the Seismic Station to the Observatory. The Seismic Station contains an 80Kg Wiechert Horizontal and Vertical Seismograph, three Galitzin Seismographs, especially designed for local earthquakes. The Observatory likewise houses the other necessities of a station of this type, such as battery rooms, photographic dark rooms and offices where the records are kept for study and reference.

Of special prominence, is the work which has been done in long range weather forecasting through a study of sun spots. This line of study was instituted by the late Father Ricard. He built up a large mass of data in this regard, so that the records and observations at the University are perhaps among the most complete of any in the country. Monthly forecasts are sent out regularly from the Observatory.

DE SAISSET ART GALLERY AND MUSEUM

Joseph J. Pociask, S.J.
General Director

Josef Hilpert, Kt. C., P.C.C.
Director of Art Gallery

John P. O'Connell, S.J.
Curator of Galtes Museum

Arthur D. Spearman, S.J.
Curator of Mission Museum

The deSaisset Art Gallery and Museum Building is the generous gift of the late Isabel de Saisset. Besides being a memorial to her famous Pioneer California family, it houses the paintings of her artist brother, Ernest, as well as the family collection of silver, jewelry, and spanish shawls. Also included in the permanent collection of the Art Gallery are

the miniatures and portraits of Dr. Josef Hilpert, the McClatchy water-color collection of California Wild Flowers, the "Symbolic Portraiture" of Henry Edmiston, and the antique furniture, paintings, ivories, and other objets d'art donated to the Gallery by Mr. E. V. D'Berger and other friends and Alumni.

The Art Gallery occupies the entire first floor and one large room of the lower floor of the building. This includes three art-exhibit rooms as well as a larger exhibition hall where lectures, musicales, and art films are given. Besides these features, changing exhibitions during the year bring the fuller and deeper meaning of Art into the experience of the student and general public.

The Mission and Galtes Museum occupy three exhibit rooms of the lower floor. The Mission collection comprises the Mission Fathers' books, vestments, historic implements, and many documents and artifacts of early California. The Galtes collection contains notable mineralogical and archaeological specimens from all parts of the world, and is particularly valuable for California mining specimens and American ores.

ARCHAEOLOGICAL AND HISTORICAL RESEARCH COMMITTEE

Francis R. Flaim, Austen Den Warburton
Co-Chairmen

This Committee, appointed by the President and approved by the Board of Trustees of the University, has two principle functions: the classification, display and loan of items in the University, Galtes and Mission Collections; and the acting as directors of student field teams in archaeological, mineral and paleontological research. This latter function includes instruction for students in identification and classification of artifacts, and the development of University collections.

p. 21 - Fr King, Chairman?

UNIVERSITY RESEARCH

Alexis I. Mei, S.J.
Chairman

The Office of University Research is an agency through which the various departments of the University may undertake studies of basic and practical problems relating to their respective fields. The Office will make arrangements with private and public organizations or individuals desiring to have such studies made in matters of business, engineering, law, science, history, etc., where the special talents and facilities of the University can be made available. Faculty members, senior students, and ultimately graduate students, will have opportunities to work on these research problems in their particular areas of specialization.

Requests for information about the services and facilities of the Office of University Research should be addressed to the Chairman, at the Administration Building on the University campus.

DEPARTMENT OF UNIVERSITY DEVELOPMENT

Charles F. Guenther, S.J.
Chairman

A department of University Development has been established at Santa Clara to provide long-range stability for the future growth of the University. Its functions are those of public relations, information, and

institutional planning and financing. It is set up as a part of the administrative structure in accordance with the practice of other modern universities.

Conservative administration and careful management of funds have enabled the University to survive the shocks and dislocations of recent years with a balanced budget, but this has so far been achieved only through stringent economies and by virtue of the fact that the University enjoys a "living endowment" of several million dollars valuation in the donated services of the Jesuit Community. Increased expenses have resulted, however, from the addition of many lay faculty members necessitated by enrollment expansion and specialized instructional requirements.

A future of continuing fluctuations in enrollment is faced by Santa Clara along with all other universities. If privately supported universities such as Santa Clara are to survive they must have the financial support of loyal alumni and friends. The Department of Development has been established to further these ends and provide technical service in the work of balancing a short-term program to meet immediate needs in relation to the long-range planning of the University as is "builds for a second century."

PLACEMENT OFFICE

Helen E. Ferris

Director

The University through its placement office and faculty aids its sturents in securing promising business openings, although it cannot, of course, guarantee employment. However, because there has been a constant demand for graduates of the University of Santa Clara, students who do satisfactory work have had little difficulty securing permanent positions upon their graduation. There is no charge for this service.

The Placement office is located in the Administration Building and remains in operation during the entire year. All students, regardless of major, are urged to take advantage of the facilities of this office, which has been organized and is being maintained for the students of the University of Santa Clara.

HUBBARD LABORATORIES

Bernard R. Hubbard, S.J., D. Sc.

Director

The function of the Hubbard Laboratories is the production, maintenance, storage, and distribution of films, slides, photographs and projection materials in pursuance of the educational purposes of the University. Enterprises that are consonant with these functions may include lectures, Radio and TV presentations, travel explorations, and the loan or sale of audio-visual materials and equipment, and of publications.

The Hubbard Laboratories are currently located in designated sections of the University's Ricard Memorial Observatory.

DEGREES CONFERRED

JUNE 15, 1957

Degrees in Course

BACHELOR OF LAWS

Marshall Norman Bean, A.B.
Curtis Ashley Cole, B.S.
Richard E. Crompton, B.S.
Karl Edwin Dame, B.S.
Donald M. Dezzani
John Corry Fell, III
Marshall W. Frazier
John F. Haigler, A.B.
Charles Kenneth James, Jr.
Ramon S. Lelli, B.A.
John Francis Murphy, Jr., B.A.
John F. Mylod, B.S.
John Howard O'Brien, B.S.
Marshall Stephen O'Brien, B.S.
Harry Kelly Ogle
Marvin Alfred Peixoto, B.S.
Vincent West Reagor
Thomas A. Salciccia

BACHELOR OF ARTS
And
BACHELOR OF SCIENCE

BIOLOGY

Richard Salvadore Campisi
Carlo Francis Caralli
Carl Artz Hendricks
*Paul Kyrean Johnson
Joseph Anthony Michaels
Joseph Thomas Rishwain, Jr.
Daniel J. Romero
Francis Leo Ryan, Jr.
Peter Joseph Sheaff
John Howard Taylor

CHEMISTRY

Richard Patrick Cotter
Gerald William Orr
*Thomas Adolph Palmer
Stanley T. Peters
Roy Martin Sloan
Geoffrey Fredrick Thompson
Robert Milton Thompson

ECONOMICS

John Charles Adamo
Charles Albert Borgerding
Bernard Richard Panella
Ronald Harrison Rader
Joseph A. Vollert

ENGLISH

Thomas P. Breen
Vernon Louis Costa
Thomas Joseph Flood
*Henry Edward Harrington
Lucius Frederick Jenkins, Jr.
D. Richard Maher
Robert Thomas Wood

HISTORY

Robert Emmanuel Castaneda
Neal Pearson Harrison
Edward James Kelly
Guy C. Klitgaard
Robert Dean Pellant
Eugene M. Premo
Lawrence Francis Terry

*Cum Laude

PHILOSOPHY

Terrence Joseph Ford, B.A.
Robert Edward Gebbie
William Ross Giffen, B.A.
Stanley James Louis
Roy Geis MacFarland
*Frederick Bell Maguire, Jr.

POLITICAL SCIENCE

Thomas Chester Atkins
Paul G. Busacca
*Elliott Dennis Chielpegian
Robert Allan Clarkin
***William Frank Delucchi, B.A.
Gerald Peter Flynn
Francis Patrick Healey, Jr.
Kenneth Donald Hermann
Billie Duane Horne
Roderick Donald McNeil
Tarvis Richard Montgomery
*Gerald Robert Mutz
Robert August Norden
Robert Henry Perrin
Jerome Joseph Rogers
Louis B. Souza, Jr.
Anthony Torlai
Richard Frank Venezia

BACHELOR OF CIVIL ENGINEERING

Erling Peton Andresen
Paul L. Busher
Ronald E. Ciraulo
John Gerald Clements
Donald L. Comstock
Paul Anthony Conrado
James Donohue Cooney
Martin T. Egan
Gerard Anthony Hayes
Alvaro Henao Jaramillo
David Allen McCosker
Karl Frederick McCullough
James Patrick McGoldrick
John Edmund Moran
Frank Henry Moss, Jr.
Jay Philip Murphy
Robert T. Owens
Luis Alvaro Pereira de Neuda
Michael L. Shank
John Phillip Smith
Louis George Weiss
Jere Earle Williams

BACHELOR OF ELECTRICAL ENGINEERING

Robert Arnold Anderson
W. Donald Baumann
**Daniel S. Boessow
Michael Joseph Bondi
*Charles Warren Cantoni
Ronald L. Carmichael
Robert David Caveney
Lawrence G. Cesar
Bing Chung Chin
***Richard Paul Dolan
Donald Charles Dust
James Watson Handley
Frank Hegarty
Curtis Joseph Hunting
James Daniel Kearney
Raymond Lee Mangini
***Gerald Charles Nistler
Thomas Richard Norton
George Arthur O'Brien
Floyd John Sichi
Henry E. Williams
John Henry Zickgraf
Joseph John Zuccaro

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*Cum Laude
**Magna Cum Laude
***Maxima Cum Laude

BACHELOR OF MECHANICAL ENGINEERING

Richard Francis Basinet
Herbert Raymond Beaven, Jr.
Frederick Krafft Benson
John Edsel Boudreau
John Morgan Bristol
Jerome L. Burroughs
William R. Chapman
John Walter Cheatham
Thomas Joseph Cunningham
John Figini
John Charles Fitzpatrick
James Joseph Gaffney
Michael Walsh Hanrahan
Erik Tandberg
**Garret Edward Weyand

BACHELOR OF SCIENCE IN COMMERCE

Anthony Lee Andrade
Hugh Daniel Ball
Brenton Carl Britschgi
Bernard Patrick Bunce
Tom Francis Campagna
Thomas Gwynn Carey
Allen C. Clarke
Paul Thomas Davis
Roger Kent Davis
Charles Angelo DePaoli
Lawrence Gustave Desmond
Adrian Richard Dioli
Edward Thomas Foster
**John William Gardner
Richard Carl Gavotto
George Nicholas Gooding
*Thomas Anthony Guilfoil
Ray S. Hausler
Raymond Armstrong Heily
Robert Emmet Jones
Peter Sherman Kimball
Gerald Thomas Kirrene
Franklyn Dale Kotey
John Alan Krimmer
Victor Joseph LoBue
Norman Henry Marsh
Francis William McDonald, Jr.
Dennis Michael Murphy
Pierre J. Nicolas
John Speros Pavlatos
George F. Peasinger
Frank Edward Perez
Richard Rodney Rolla
Robert K. Ryland
Paul Roger Salmon
Alfredo Francisco Sere
Robert E. Shields
Wallace George Smith
George R. Soetje
Harry Keith Stearns
Edwin J. Valencia, Jr.
**Robert Elliott Wilkins
Thomas Masami Yuki

*Cum Laude
**Magna Cum Laude

ALPHA SIGMA NU

The following graduates are members of Alpha Sigma Nu, the National Jesuit Honor Society:

Daniel S. Boessow
Richard P. Dolan
John W. Gardner
Billie D. Horne
Ramon S. Lelli
Fred B. Maguire
Roderick McNeil
Gerald C. Nistler
Vincent W. Reagor
Garret E. Weyand
Robert E. Wilkins

STUDENTS RECEIVING COMMISSIONS AS SECOND LIEUTENANTS IN THE UNITED STATES ARMY RESERVE CORPS, JUNE 15, 1957

RESERVE OFFICERS TRAINING CORPS

Cadets to be Commissioned

Second Lieutenants, United States Army Reserve

Presented by Major Jean B. La Marre, APMST

*Louis B. Souza
Military Intelligence

*Daniel S. Boessow
Armor

***Francis W. McDonald, Jr.
Armor

James R. Tormey
Military Police Corps

*John M. Bristol, Jr.
Armor

*Charles W. Cantoni
Signal Corps

***Billie D. Horne
Artillery

***John A. Krimmer
Medical Service Corps

***James J. Gaffney
Artillery

John Figini
Ordnance Corps

*Richard P. Dolan
Signal Corps

Lucius F. Jenkins
Infantry

Anthony L. Andrade
Quartermaster Corps

Brenton C. Britschgi
Quartermaster Corps

Thomas J. Flood
Infantry

Fred B. Maguire, Jr.
Military Intelligence

Jere E. Williams
Armor

Jerome J. Rogers
Military Intelligence

David A. McCosker
Infantry

Gerald P. Flynn
Military Intelligence

Richard F. Venezia
Military Intelligence

Robert T. Owens
Corps of Engineers

Lawrence F. Terry
Military Intelligence

Robert E. Jones
Medical Service Corps

Eugene M. Premo
Military Intelligence

Joseph J. Zuccaro
Corps of Engineers

Gerald W. Orr
Corps of Engineers

Garry E. Weyand
Ordnance Corps

John C. Clements
Military Intelligence

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*Indicates Distinguished Military Graduate.
***Indicates those who received a Regular Army commission.

Robert K. Ryland
Transportation Corps

Ray S. Hausler
Medical Service Corps

Kenneth D. Hermann
Military Intelligence

Harry K. Stearns
Artillery

**Donald P. Baumann
Military Intelligence

**Thomas J. Cunningham
Artillery

Roy M. Sloan
Artillery

Roy G. MacFarland
Artillery

John P. Smith
Corps of Engineers

Gerald T. Kirrene
Transportation Corps

Robert D. Pellant
Military Intelligence

Frank H. Moss, Jr.
Ordnance Corps

Robert A. Clarkin
Artillery

John C. Pavlatos
Infantry

John C. Fitzpatrick
Artillery

Paul R. Salmon
Transportation Corps

Michael W. Hanrahan
Artillery

Pierre J. Nicholas
Transportation Corps

Thomas P. Breen
Military Intelligence

Donald L. Comstock
Artillery

Francis P. Healey, Jr.
Armor

John E. Moran
Military Intelligence

Donald C. Dust
Corps of Engineers

Robert T. Wood
Military Intelligence

William R. Chapman
Ordnance Corps

Richard F. Basinet
Armor

Allen C. Clarke
Transportation Corps

**LeRoy M. Baker
Armor

Thomas M. Yuki
Quartermaster Corps

Neal P. Harrison
Military Intelligence

Ronald E. Ciraulo
Ordnance Corps

Peter S. Kimball
Transportation Corps

Thomas C. Atkins
Military Intelligence

Stanley T. Peters
Ordnance Corps

Gerard A. Hayes
Ordnance Corps

**Indicates those commissioned on August 2, 1957.

EXTRAORDINARY PRIZES

Academic Year 1957

UNIVERSITY SERVICE AWARD

Lloyd L. Bolton, B.A., M.A., Ph.D.
Department of Biology

Edmund C. Flynn, B.S. in C.E., M.S.
Department of Civil Engineering

Clemens Van Perre, B.A.
Department of Foreign Languages

The Nobili Medal, founded by Joseph A. Donohoe, Esq., to be given to the student judged outstanding in personal conduct, school activities, and studies, was awarded to Roderick D. McNeil.

HONORABLE MENTION: John Gardner, Robert Wilkins.

The Silver Medal, for the resident student, distinguished for conduct and application, was awarded to Daniel S. Boessow.

HONORABLE MENTION: Charles W. Cantoni, Peter J. Sheaff.

The Silver Medal, for the non-resident student distinguished for conduct and application, was awarded to William F. Delucchi.

HONORABLE MENTION: Billie Horne, Ronald H. Rader.

The Religion Prize, given by the President of the University, to be given to an upper division student, for proficiency in religion, was awarded to Anthony J. McKeon.

The Michael Shallo Prize in Political Science, an annual prize founded in 1955 by the University in honor of Father Michael Shallo, S.J., Professor of Political Philosophy, to be given to the student of the University selected by competition as the most proficient in Political Science, was awarded to Gerald P. Flynn.

The Handlery Prize, founded by Mrs. Rose Handlery in honor of her son, Raymond, of the class of 1934, to be given to the senior student who has contributed most to the success of any of the University publications, was awarded to Eugene M. Premo.

The Orella Prize, founded by Dr. and Mrs. Firmin R. Orella, to be given to the senior student in the Department of Science who attains the highest average in scientific subjects during the junior and senior years, was awarded to Paul K. Johnson.

The American Institute of Chemists' Medal, for excellence in the study of Chemistry, was awarded to Roy M. Sloan.

The Redwood Prize, for the best essay on an historical subject, was awarded to Guy C. Klitgaard.

The Owl Prize, founded by the directors of the former College Magazine *"The Owl"*, to be given to the one most successful in the oratorical contest, was awarded to John E. Mason.

The Dramatic Art Prize, founded in honor of Mr. William H. Leahy by his wife and by his brother, Mr. James Leahy, for the winner of the Dramatic Art Contest, was awarded to Richard P. Stember.

The McCann Prize, founded in honor of Daniel B. McCann, to be given for the best short story, was awarded to Albert G. Clarkson.

The Business Administration Prize, an engraved key given by the Business Administration Association to the Senior in the College of Business Administration who shall be deemed to have contributed the most to the success of the College of Business Administration, was awarded to Brenton C. Britschgi.

The Delta Sigma Pi Scholarship Key, an engraved key given by the International Commerce Fraternity, Delta Sigma Pi, to the senior in the College of Business Administration with the highest scholastic average, was awarded to John W. Gardner.

The Finance Medal, an engraved silver medal and a year's subscription to the Wall Street Journal given annually to the senior with the highest scholastic average majoring in Finance in the College of Business Administration, was awarded to Thomas A. Guilfoil.

The Schwartz Finance Prize, given by Mr. Sidney L. Schwartz of San Francisco, to be given annually to the student in the College of Business Administration who submits the most outstanding contribution in the field of Finance, was awarded to Anthony J. McKeon.

The Schwartz Business or Economics Prize, given by Mr. Sidney L. Schwartz of San Francisco, to be given annually to the student in the College of Business Administration who submits the most outstanding contribution in the field of Business Administration or Economics, was awarded to H. Keith Stearns.

The Isabel Jones Prize, founded by Mr. Eliot Jones in honor of his wife, Isabel Jones, to be given to the senior student of the College of Business Administration who is judged by the Faculty of that College to be outstanding in scholarship, was awarded to John W. Gardner.

The President's Prize, a prize of $100 given by the President of the University for the senior class student in the College of Engineering who has earned the highest average during his undergraduate years in the College, was awarded to Richard P. Dolan.

The Chargin Prize, in honor of Mr. and Mrs. Joseph A. Chargin, Sr., to be given to the senior student in the College of Law who has maintained the highest class average throughout his law course, was awarded to Vincent W. Reagor.

The Shipsey Poetry Prize, founded in 1954 by Richard M. Schmidt in honor of the late Reverend Edward Shipsey, S.J., to be presented to the student selected by the Faculty of the Department of English for the most outstanding contribution in the art of Poetry was awarded to Daniel R. Maher.

The Outstanding Law Graduate Award, presented to the graduating senior who best represents in his class, the type of student the University of Santa Clara Law School is most proud to graduate, by reason of his demonstrated qualities of scholarship, community leadership, and sense of moral responsibility, was awarded to Ramon S. Lelli, B.A.

The Community Leadership Awards, presented to the graduating seniors deemed most likely to discharge their obligations, as members of the legal profession to serve and lead our society, by reason of outstanding qualities of community leadership and social consciousness demonstrated through their activities as students and members of the Student Bar Association, were awarded to Charles K. James, Jr., Thomas A. Salciccia and John H. O'Brien.

The San Jose Civic Club Gift, presented by a group of San Jose business and professional men to encourage interest in the study of the Italian language and culture, to be given, in part, to the students most diligent in the study of Italian, was awarded as follows: Leon E. Panetta, Louis M. Castruccio, Harold E. Petroni.

Santa Barbara Medals. Four gold medals given by the President of the University on the recommendation of the Professor in Military Science and Tactics, for the outstanding cadet in each of the four years of training were awarded to: Senior, Frank C. Mooney; Junior, Roger K. Easley; Sophomore, Eugene A. Burdick; Freshman, George M. H. Chun.

no longer required by State Law
omit Roster (pp 201-250)

REGISTER OF STUDENTS

1957 - 1958

Abbreviations Used

A&S— College of Arts and Sciences
Aud.— Auditor
B.A.— College of Business Administration
Engr.— College of Engineering
Ev.— Evening Division
Fr.— Freshman
Grad.— Graduate
Jun.— Junior
Nrs.— Nurse
P/T— Part Time
Sen.— Senior
Soph.— Sophomore
Spec.— Special Student
Sub.-Sen.—Sub. Senior

Abbott, Gordon G.	Sub.-Sen. B.A.	Agnew
Aberle, Richard A.	Soph. B.A.	Cupertino
Abler, Keith G.	Fr. Engr.	Los Altos
Abrahamsen, Philip J.	Fr. Engr.	Burlingame
Abreu, Ronald P.	Sen. B.A.	Rio Vista
Accinelli, Robert D.	Fr. A&S	San Francisco
Acronico, Eugene C.	P/T B.A.	Saratoga
*Adams, Anthony A.	Soph. A&S	Los Angeles
Adams, James J.	Soph. A&S	Pomona
Adams, Willis T.	Ev. B.A.	Redwood City
Adelson, Morris B.	Ev. B.A.	Santa Clara
Adler, Charles R.	Sen. B.A.	San Luis Obispo
Aggeler, Geoffrey D.	Fr. A&S	Santa Barbara
Aguirre, Norman R.	Ev. B.A.	San Jose
Ahern, Paul J.	Fr. Engr.	San Francisco
Ahlborn, Andrew F.	Ev. B.A.	Fremont
Ahlers, Karl L.	Sen. Engr.	Managua, Nicaragua
Aikman, Beatrice M.	Ev. B.A.	Santa Clara
Akin, William P.	Ev. B.A.	San Jose
Albrecht, Michael L.	Fr. B.A.	Bellevue, Washington
Alexander, Douglas C.	Fr. Engr.	Palo Alto
Allen, Edmund P.	Sen. A&S	Seattle, Washington
Allen, Robert J.	Ev. B.A.	Campbell
Allen, Yater F.	Jun. Engr.	San Francisco
Alphonse, Harold T.	Law II	San Carlos
Alvarez, Edward M.	Soph. B.A.	San Jose
Alvarez, Everett, Jr.	Jun. Engr.	Salinas
Alvernaz, Henry L.	Soph. A&S	San Jose
Alves, Robert G.	Jun. B.A.	Los Banos
Ames, John S.	Ev. B.A.	Santa Clara
Anater, Edward F.	Ev. B.A.	Sacramento
Andersen, Ronald M.	Soph. A&S	Santa Rosa
Andreini, Donald	Fr. A&S	San Francisco

Andrews, Samuel L.	Ev. B.A.	Santa Clara
Andrews, Walter C.	Ev. B.A.	Los Altos
Andrews, Winifred O.	Ev. B.A.	Los Altos
Antes, Gary M.	Fr. B.A.	San Jose
Anton, Cornell, Jr.	Eve. B.A .	San Jose
Antony, Joseph G.	Sen. A&S	Medford, Oregon
Araquistain, George	Soph. B.A.	Managua, Nicaragua
Arel, Gary G.	Fr. A&S	Orinda
Armanasco, Bob L.	Ev. B.A.	San Jose
Armstrong, Dorothy E.	Ev. B.A.	Hayward
Arnold, Burnie L.	Ev. B.A.	Palo Alto
Astrahan, Benjamin	Ev. B.A.	San Jose
Atchison, Richard B., Jr.	Law I	Aptos
Aubert, Larry M.	Ev. B.A.	Sunnyvale
Averill, John R.	Fr. Engr.	Madera
Averill, Richard J.	Ev. B.A.	San Jose
Avila, Donald J.	Law II	Eureka
Azevedo, Eugene M.	Law II	Modesto
Azevedo, Richard S.	Fr. A&S	Santa Clara
Azevedo, Ronald J.	Sen. B.A.	Santa Clara
Azhderian, Hermine	Nrs. A&S	Los Banos
Bach, John A.	Jun. A&S	Milwaukee, Wisconsin
Bachelin, Nicholas R.	Jun. Engr.	Pacific Palisades
Bachich, Jerry G.	Jun. A&S	San Bruno
Bachman, Rudy F.	Fr. A&S	Redwood City
Baciocco, Ernest L.	Soph. B.A.	Mountain View
Baedeker, Daniel F.	Fr. A&S	Glendale
Baer, Max D.	Jun. B.A.	Sacramento
Bagley, Ralph F., Jr.	Law II	Glendale
Bailey, Francis W.	Ev. B.A.	Santa Clara
Bailey, Robert D.	Jun. Engr.	Mountain View
*Bailie, David B.	Spec. A&S	Sacramento
*Baker, John M.	Spec. A&S	Palo Alto
Baker, Keith M.	Ev. B.A.	Campbell
Baker, Robert N.	Law II	Corona
Balberde, Alexander, Jr.	Sen. Engr.	Honomu, Hawaii
Baldelli, Joseph A.	Fr. Engr.	Los Altos
Ball, John T.	Law III	Los Gatos
Banchero, Joseph J.	Jun. A&S	Seattle, Washington
Bannan, Philip B.	Fr. A&S	San Marino
Bannan, Thomas	Sub.-Sen. A&S	San Marino
Barbeau, Clayton C.	Jun. A&S	Sacramento
Barber, James S.	Sen. B.A.	Porterville
Barcells, Frank J.	Ev. B.A.	Santa Clara
Bardwil, Richard P.	Fr. Engr.	Los Angeles
Barkett, Henry J.	Fr. A&S	Stockton
Barnes, Fred R.	Ev. B.A.	Cupertino
Barnett, Malcolm B.	Soph. A&S	San Francisco
Baroni, Guido A.	Ev. B.A.	San Jose
Barr, Michael J.	Fr. A&S	Ogden, Utah
Barrett, Robert C., Jr.	Jun. A&S	San Francisco
*Barry, James B.	Spec. A&S	San Marino
Barry, Philip J.	Soph. A&S	San Marino
Barson, Alfred T.	Fr. A&S	West Sacramento

Bartlebaugh, Carl M.	Fr. Engr.	Salinas
Basile, Richard L.	Soph. B.A.	San Jose
Bauer, Ronald F .	Jun. Engr.	Newport, Oregon
Bauerle, Richard D.	Jun. Engr.	Saratoga
*Baumann, John A.	Fr. A&S	San Jose
Beach, Kenneth M., Jr.	Ev. B.A.	Menlo Park
Beach, Ronald E.	Ev. B.A.	Santa Clara
Beal, Alan J.	Fr. Engr.	San Jose
Beaudette, Dewey B.	Ev. B.A.	San Jose
*Beaudoin, Philip R.	Jun. A&S	Palo Alto
Beckett, Alvin C.	Ev. B.A.	Campbell
Beisch, Michael J.	Fr. A&S	San Gabriel
Bell, Alan J.	Soph. A&S	Stayton, Oregon
Bell, John B.	Ev. B.A.	San Jose
Bellaria, Philip P.	Sen. B.A.	Hayward
Bellaschi, Victor A.	Fr. B.A.	Portland, Oregon
Benedetti, Gerald A.	Jun. Engr.	Salinas
Bennett, Edward A.	Ev. B.A.	Glendale
Bennett, James M.	Jun. A&S	Sacramento
Berg, Joseph U.	Soph. B.A.	Los Gatos
Berg, William N.	Jun. A&S	Long Beach
Bergfors, Ronald C.	Fr. A&S	Los Altos
Bernacchi, Richard L.	Fr. A&S	Alhambra
Berry, Barbara K.	Nrs. A&S	Gilroy
Berry, Martin A.	Fr. Engr.	Sherman Oaks
Berti, Leo A.	Ev. B.A.	Los Gatos
Berticevic, Donald L.	Ev. B.A.	San Jose
Bertolani, Victor A.	Law I	Sacramento
Bertuccelli, George J.	Jun. Engr.	Stockton
Besmer, Thomas J.	Soph. Engr.	St. Louis, Missouri
Bettencourt, Herman S.	Jun. Engr.	Niles
Bevers, Wendell S.	Ev. B.A.	Sunnyvale
Bianco, Philip S.	Law I	Visalia
Bihn, Mark A.	Fr. B.A.	San Jose
Biltoft, Charles W.	Ev. B.A.	Santa Clara
Biltoft, Russell H.	Ev. B.A.	Santa Clara
Birmingham, John M.	Sen. B.A.	Beverly Hills
Bischoff, Richard O.	Jun. Engr.	Campbell
Bitterolf, Joan C.	Ev. B.A.	Alhambra
Blach, Richard H.	Sen. A&S	Los Altos
Black, Thomas A.	Law II	Oakland
Blalock, William M.	Fr. Engr.	South San Francisco
Boardway, Marie H.	Ev. B.A.	Santa Clara
Bocci, Jerrold C.	Jun. A&S	Colma
Bodine, Charles M.	Sen. Engr.	Lindsay
Bodine, Jean F.	Jun. Engr.	Santa Clara
Bohley, Frances O.	Ev. B.A.	Palo Alto
Bollock, Emanuel	Ev. B.A.	Palo Alto
Bone, Kenneth E.	Ev. B.A.	San Jose
Bonicelli, Mario P.	Ev. B.A.	Los Altos
Bonitz, Richard E.	Soph. Engr.	San Francisco
Bordallo, Rodney B.	Sen. B.A.	Tamuning, Guam
Borelli, Frank P., Jr.	Law II	Hollister
Borello, Pierino J.	Law III	Sunnyvale
Boring, Helen M.	Ev. B.A.	San Carlos

Bork, Erwin M. J., Jr.	Jun. B.A.	Redwood City
Bortfeld, David P.	Soph. A&S	San Diego
Bosacci, Everett M.	Sen. A&S	Stockton
Botelho, George E.	Jun. B.A.	Hilo, Hawaii
Botsford, Neil	Fr. A&S	Martinez
Bounds, Benjamin A.	Fr. B.A.	Yakima, Washington
Bourquin, Dennis M.	Sen. A&S	San Mateo
Bourret, Raymond R.	Ev. B.A.	Mountain View
Bowling, John G.	Fr. Engr.	West Englewood, New Jersey
Boyes, Raymond L.	Ev. B.A.	Mountain View
Brady, Frank W.	Soph. Engr.	San Francisco
Brann, Wallace H., Jr.	Ev. B.A.	Palo Alto
Branson, Thomas A.	Fr. A&S	Burlingame
Brasile, William N.	Soph. Engr.	Pleasant Hill
Breen, John P.	Jun. Engr.	Hollister
Breen, Peter A.	Sen. A&S	Hollister
Brennan, George W.	Jun. B.A.	Menlo Park
Bresniker, Robert L.	Soph. Engr.	Hayward
Brewer, Kenneth R.	Soph. A&S	Honolulu, Hawaii
Brillault, Edward P., Jr.	Jun. B.A.	Seattle, Washington
Brindle, Alexander W.	Soph. A&S	Seattle, Washington
Britton, Delford G., Jr.	Fr. A&S	St. Helena
Brock, Joseph A.	Soph. A&S	Placerville
*Brock, Robert E.	Spec. A&S	Burlingame
Brockman, Peter M.	Jun. A&S	San Francisco
Brown, Donald G.	Ev. B.A.	Santa Clara
*Brown, Edmund G.	Soph. A&S	San Francisco
Brown, Edward G.	Fr. Engr.	Seattle, Washington
*Brown, Gerald L.	Soph. A&S	San Francisco
Brown, Reginald L.	Ev. B.A.	San Jose
*Brown, Wallace A.	Spec. A&S	Tacoma, Washington
Brown, William F., Jr.	Law I	San Jose
Browne, John D.	Soph. A&S	Los Angeles
Bruce, Scotty A.	Soph. Engr.	Manteca
Bruno, Bruce E.	Jun. A&S	San Anselmo
Bruno, Victor A., Jr.	Sen. B.A.	Pasadena
*Brunolli, John M.	Soph. A&S	Madera
Bruzzone, Donald J.	Soph. Engr.	San Francisco
Bryant, Daniel T.	Fr. A&S	San Jose
Buchter, Frank C.	Soph. Engr.	Hollister
Buckley, Tom C.	Sen. A&S	Los Altos
Buddingh, Jan. G.	Fr. A&S	Honolulu, Hawaii
Buehler, Marvin L.	Ev. B.A.	Monte Vista
Bufalini, Joseph B.	Fr. B.A.	San Jose
Bukow, George J.	Sen. Engr.	St. Helena
Bundesen, Harold W.	Ev. B.A.	San Jose
Buoncristiani, A. Martin	Soph. A&S	San Francisco
Burdick, Eugene A.	Jr. A&S	Crescent City
Burke, Halley E.	Ev. B.A.	Campbell
Burke, John D.	Fr. B.A.	Ukiah
Burke, Michael A.	Soph. A&S	San Francisco
Burke, Raymond T.	Jun. A&S	San Francisco
Burnett, George D.	Ev. B.A.	San Jose
Burns, Michael L.	Soph. A&S	Pasadena

Burns, Vincent T., Jr.	Sub.-Sen. A&S	Pasadena
Burzio, Agostino	Soph. Engr.	San Jose
Bush, Gerald W.	Sen. A&S	San Jose
Butler, John W.	Fr. B.A.	San Francisco
Butorovich, Vincent P	Ev. B.A.	Oakland
Cabarloc, Soladad B.	Ev. B.A.	Mountain View
Cable, Theresa E.	Ev. B.A.	San Jose
Cady, Grover C.	Fr. A&S	San Mateo
Cahalan, William P.	Fr. B.A.	San Jose
Cahill, William F.	Fr. A&S	La Puente
Caillouette, Richard A.	Law II	Tacoma, Washington
Cain, Leonord T.	Law III	Lodi
Cala, Joseph C.	Sen. B.A.	Burlingame
Caldwell, Gary L.	Soph. Engr.	San Jose
Callahan, Richard R.	Jun. B.A.	Palo Alto
Callan, Lawrence J.	Soph. B.A.	San Anselmo
Callan, Robert R.	Fr. A&S	San Francisco
Calmes, Raymond A., Jr.	Ev. B.A.	Santa Clara
Calou, Gary F.	Soph. B.A.	Piedmont
Calvello, Donald C.	Fr. A&S	San Jose
Calvo, Paul M.	Sen. B.A.	Agana, Guam
Cameron, Walter L.	Jun. Engr.	Napa
Campbell, Hugh A.	Jun. B.A.	Santa Rosa
Campbell, Robert M.	Fr. Engr.	San Jose
Campi, Anthony V.	Sen. Engr.	San Francisco
Campodonico, John R.	Fr. A&S	San Francisco
Cancilla, Charles E.	Jun. Engr.	Burlingame
Cancilla, Michael A.	Sen. B.A.	San Jose
Cannizzaro, Frank T.	Soph. Engr.	San Francisco
Cannon, Frank M.	Ev. B.A.	Palo Alto
Cannon, George W.	Sen. Engr.	Berkeley
Caparelli, Allen J.	Soph. A&S	San Jose
Capitolo, Mark D.	Fr. Engr.	San Carlos
Cappelluti, Paul A.	Soph. A&S	Madera
Capriola, Martin S.	Fr. A&S	Willows
Cardinalli, Providence H.	Nrs. A&S	Monterey
Carey, Wayne P.	Fr. Engr.	La Puente
Cargill, Caroll L.	Ev. B.A.	Santa Clara
Caringella, Paul B.	Fr. A&S	Ontario
Carle, Willard A., Jr.	Jun. Engr.	E. Palo Alto
Carlson, Clarence H.	Ev. B.A.	San Carlos
Carnett, Ralph E.	Ev. B.A.	San Jose
Carniato, John J.	Fr. A&S	San Carlos
Caro, Robert V.	Sen. A&S	San Jose
Carr, Edward F.	Sen. Engr.	Los Angeles
Carraro, Frank R.	Soph. Engr.	San Francisco
Carroll, Patrick J.	Soph. B.A.	Burbank
Carroll, William A.	Sen. A&S	San Francisco
Carruth, Victor L.	Ev. B.A.	Mountain View
Carson, Fred M .	Ev. B.A.	Campbell
Cartmell, Stanley E.	Ev. B.A.	Los Gatos
Casey, Brian R.	Fr. A&S	Portland, Oregon
Casey, John T., Jr.	Soph. A&S	Portland, Oregon
Castelazo, Jorge R.	Fr. A&S	Glendale

Castellucci, Robert J.	Sen. B.A.	Los Banos
Castro, Richard W.	Fr. A&S	Santa Clara
Castruccio, Louis M.	Soph. A&S	San Marino
Catalaa, Georges J.	Fr. Engr.	San Rafael
Caton, Curtis M.	Fr. A&S	Fresno
Caudillo, Concepcion	Ev. B.A.	Santa Clara
Cavadias, Marios R.	Soph. B.A.	Santa Cruz
Cebrian, Albert P.	Ev. B.A.	Santa Clara
Cecchettini, Albert A.	Fr. B.A.	Santa Cruz
Cepollina, John F.	Jun. Engr.	Oakland
Chamberlain, Robert E.	Ev. B.A.	Sunnyvale
Chang, Kenneth B.	Law I	Seoul, Korea
Chapman. James R.	Ev. B.A.	San Jose
Chase, Harry T., Jr.	Soph. A&S	Coronado
Chekian, Richard M.	Ev. B.A.	San Jose
Chielpegian, Elliott D.	Law I	Fresno
Chinchiolo, Robert P.	Jr. A&S	Stockton
Ching, Calvin K.	Soph. Engr.	San Francisco
Chittenden, Warde P.	Jun. B.A.	Claremont
Chock, Linus G. K.	Jr. B.A.	Honolulu, Hawaii
Christensen, Maurine P.	Ev. B.A.	Palo Alto
Christianson, Lloyd P.	Ev. B.A.	Santa Clara
Chu, Rodney C. L.	Sen. A&S	Honolulu, Hawaii
Chun, George M. H.	Soph. A&S	Honolulu, Hawaii
Ciarlo, Dino R.	Soph. Engr.	Niles
Cicoletti, Theodore A.	Jr. Engr.	San Francisco
Cimino, David	Fr. B.A.	San Francisco
Ciraulo, Robert L.	Sen. B.A.	San Francisco
Cirone, Richard A.	Soph. A&S	San Jose
Citraro, Paul V.	Ev. B.A.	Santa Clara
Clark, Casey K.	Sen. Engr.	San Jose
Clark, James W. F.	Fr. B.A.	Palo Alto
Clark, Richard B.	Sen. B.A.	Palo Alto
Clarkson, Albert G.	Soph. A&S	Charleston, West Virginia
Clay, Latha L.	Ev. B.A.	San Jose
*Clemo, Ronald C.	Spec. A&S	San Francisco
Cloney, Lawrence J.	Jun. Engr.	Myers Flat
Clopton, William H.	Law III	Palo Alto
Cloran, Michael J.	Jun. A&S	Pasadena
Coelho, Louis J.	Law II	San Jose
Coffee, Desmond T.	Fr. A&S	Tulare
Coffee, Robert L.	Ev. B.A.	Santa Clara
Coffey, Jerome W.	Ev. B.A.	San Jose
Coffey, Michael L.	Sen. B.A.	Santa Clara
Coffey, William D.	Sen. Engr.	Bayonne, New Jersey
Colbeck, John N.	Ev. B.A.	Irvington
Colburn, Gary C.	Jun. A&S	Plymouth
Colby, David H.	Jr. Engr.	San Leandro
*Coleman, John A.	Jun. A&S	San Francisco
Colin, Charles B.	Ev. B.A.	Cupertino
Collard, William H.	Law I	Sacramento
*Collins, Denis E.	Fr. A&S	Oakland
Collins, John J.	Sen. A&S	San Marino
Cominos, Andy H.	Law I	Salinas
Compagno, Salvatore J.	Law I	Monterey

Conant, Roger V.	Sen. B.A.	Sacramento
Condrin, William R.	Sen. A&S	San Bruno
*Conn, Francis W.	Jun. A&S	Pasadena
Conn, James P.	Jun. B.A.	Pasadena
Connelly, Robert J.	Law P/T	Los Altos
Connolly, James P.	Soph. Engr.	Napa
Conser, Richard L.	Jun. B.A.	Mountain View
Cook, Jack C., Jr.	Jun. B.A.	San Jose
Cook, Lee A.	Fr. A&S	San Francisco
Cooney, Robert W.	Ev. B.A.	San Jose
Cooney, Willis F.	Ev. B.A.'	Redwood City
Corbin, Kenneth E.	Ev. B.A.	Campbell
*Cordero, Don A.	Soph. A&S	Bakersfield
Corea, Vernon A.	Jun. Engr.	Santa Clara
Corsiglia, Victor R.	Fr. Engr.	Sacramento
Corso, Joseph J.	Law I	Cleveland, Ohio
Corso, Richard J.	Soph A&S	Los Altos
Cosgrove, Michael J.	Sen. Engr.	San Jose
Coston, Robert M.	Soph. Engr.	Yuma, Arizona
Coughlin, John H.	Fr. A&S	Seattle, Washington
Cougill, Billy J.	Law III	San Jose
Courtney, Ralston L.	Law II	Oakland
Covey, Ross W.	Ev. B.A.	Redwood City
Coyne, Louis W.	Sen. B.A.	San Francisco
Crawford, Donald F.	Ev. B.A.	Campbell
Creighton, Keith S.	Ev. B.A.	San Jose
Creighton, Richard W.	Soph. A&S	San Anselmo
Crispino, Nicholas C.	Ev. B.A.	San Jose
Cristofano, Sam M.	Ev. B.A.	Santa Clara
Crofoot, John P.	Fr. A&S	Ukiah
Cronin, John F.	Law II	Los Angeles
*Crosby, Donald F.	Spec. A&S	Dos Rios
Cross, Robert L.	Law II	San Jose
Crowe, John T.	Soph. A&S	Visalia
Crowell, Sandra E.	Ev. B.A.	San Jose
Crowley, James D.	Fr. A&S	San Mateo
Cruickshank, David L.	Ev. B.A.	San Jose
Cummings, Barry W.	Jun. B.A.	San Francisco
Cuneo, John E.	Jun. Engr.	Healdsburg
Cuneo, William F.	Soph. B.A.	San Francisco
Curry, John J.	Sen. A&S	Redwood City
Curry, Thomas F.	Soph. Engr.	Redwood City
Curtola, Terry A.	Fr. B.A.	Vallejo
Cusick, Joseph D.	Law II	Los Gatos
Daher, Paul R.	Jr. Engr.	Santa Clara
Dahl, Regis D.	Fr. B.A.	Santa Maria
Dakan, Robert E.	Law P/T	San Jose
Dakan, Thomas B.	Jun. Engr.	San Gabriel
Daley, Maynard J. Jr.	Ev. B.A.	Santa Clara
Daley, Robert E.	Sen. B.A.	San Jose
Dalton, Richard F.	Jun. A&S	Seattle, Washington
Damon, Robert E.	Ev. B.A.	Mountain View
*Damrell, Frank C.	Soph. A&S	Modesto
Danborn, Edward A.	Law I	San Jose

D'Anello, Victor M., Jr.	Jun. A&S	Panama, Rep. of Panama
Danforth, Jane V.	Ev. B.A.	Sunnyvale
Daniels, James P.	Fr. B.A.	San Mateo
Dannis, Loretta H.	Ev. B.A.	Los Gatos
Daugherty, Helene A.	Ev. B.A.	Los Gatos
Davies, Thomas A.	Law II	San Diego
Davis, George E., Jr.	Sen. A&S	Glendale
Davis, Yolanda M.	Ev. B.A.	San Jose
Dawson, David P.	Jun. A&S	San Francisco
Dawson, John T.	Law I	Tacoma, Washington
De Armond, Stephen J.	Fr. Engr.	Santa Clara
De Carlo, Peter J.	Fr. B.A.	San Jose
Deck, Jerry B.	Jun. A&S	San Jose
De Cristoforo, Anthony, Jr.	Law III	Sacramento
*Degnan, John J.	Jun. A&S	San Jose
Degregori, John H.	Jun. B.A.	Los Banos
Degrenier, Edward C.	Ev. B.A.	Sunnyvale
Dekker, Robert H.	Soph. Engr.	Palo Alto
De Klotz, Fred W., Jr.	Law II	San Jose
Delaney, George A.	Fr. A&S	Tacoma, Washington
de la Pena, Donald J.	Jun. Engr.	Hillsborough
de la Roza, Shevlin F.	Soph. B.A.	San Jose
De Leeuw, Neil A.	Fr. A&S	Phoenix, Arizona
Della Maggiore, Dario A.	Sen. B.A.	San Jose
del Rosario, Manuel L., Jr.	Soph. B.A.	San Francisco
De Luca, Rudy S.	Ev. B.A.	San Jose
Delucchi, William F.	Law I	Redwood City
De Maria, Margaret D.	Nrs. A&S	Monterey
De Martini, Anthony K.	Fr. A&S	Phoenix, Arizona
De Martini, Lloyd J.	Sen. B.A.	Covina
Dempsey, Lawrence T.	Fr. Engr.	Whittier
Dempsey, William F.	Sr. A&S	San Jose
De Prie, Michael C.	Soph. B.A.	Saratoga
Derry, James F.	Soph. Engr.	Atherton
Des Jardin, Myrel E.	Ev. B.A.	Redwood City
Devin, Stephen M.	Fr. Engr.	San Francisco
Devincenzi, Arthur C.	Jun. Engr.	San Francisco
Devlin, John H.	Law I	San Jose
Diederichsen, Robert G.	Ev. B.A.	Mountain View
Diehl, Donald H.	Ev. B.A.	Cupertino
Diepenbrock, Anthony C.	Fr. A&S	Sacramento
Dilbeck, Delbert N.	Law III	Stockton
Dittman, Richard H.	Jun. A&S	Pollock Pines
Dixon, John M.	Ev. B.A.	San Jose
Dobbs, Kenneth K.	Ev. B.A.	San Jose
Dobel, P. Steve	Fr. Engr.	San Francisco
Doherty, Donald G.	Sen. B.A.	Hollister
Doherty, John R.	Spoh. A&S	San Jose
Doherty, Patrick O.	Fr. B.A.	Portland, Oregon
Dominguez, Jimmy M.	Ev. B.A.	Santa Clara
Domino, Fredric J.	Fr. A&S	San Jose
Donahue, James P.	Sen. A&S	Arcadia
Donald, John R.	Fr. B.A.	Palo Alto
Donegan, Daniel D.	Jun. A&S	Los Angeles
Donohoe, Vincent R.	Jun. Engr.	San Francisco
Donovan, Daniel E.	Law I	Santa Clara

Dooling, Joseph J., Jr.	Fr. B.A.	Arcadia
Dorsey, Terrence W.	Jun. B.A.	West Sacramento
Dossee, Robert L.	Law I	Millbrae
Douglas, Bruce M.	Jun. Engr.	Fortuna
Douglass, James W.	Soph. A&S	Seattle, Washington
Dowling, Michael C.	Fr. Engr.	San Francisco
Downs, William M.	Ev. B.A.	Mountain View
Doyle, David D.	Soph. A&S	Palo Alto
Doyle, Richard P.	Soph. B.A.	San Francisco
Doyle, Thomas J., Jr.	Ev. B.A.	San Jose
Draper, Garry W.	Ev. B.A.	San Jose
Du Bay, Andre R.	Sen. A&S	Portland, Oregon
Duerson, Jearl S.	Ev. B.A.	Saratoga
Duffy, George M.	Fr. A&S	Burlingame
Duff, Gary O.	Soph. B.A.	Antioch
Duggan, Curtis J.	Ev. B.A .	San Mateo
Duke, William J.	Sen. A&S	San Francisco
Dunehew, James R.	Ev. B.A.	San Jose
Dunlay, Terrence J.	Jun. A&S	San Jose
Dunn, Ernest W.	Law I	Santa Clara
Dunnigan, Joseph H.	Soph. A&S	Beverly Hills
Dust, Robert P.	Fr. B.A.	Belmont
Dyer, Richard C.	Fr. Engr.	Santa Maria
Dynan, George E.	Soph. A&S	Oakland
Eagle, James E.	Ev. B.A .	Palo Alto
Easley, Roger K.	Sen. A&S	San Francisco
Eastburg, John A.	Ev. B.A.	San Jose
Eaton, Donald J.	Jun. A&S	Emmett, Idaho
Eaton, Elsie E.	Ev. B.A.	Mountain View
Echeandia, Ramon V.	Jun. Engr.	San Sebastian, Puerto Rico
Egan, William F.	Sen. Engr.	San Francisco
Ehelebe, Edward D.	Ev. B.A.	Palo Alto
*Eifert, Daniel E.	Soph. A&S	Santa Ana
Eisele, Fred R.	Fr. A&S	Scarsdale, New York
Encimer, Paul D.	Jun. A&S	Pomona
Engeli, Gerald T.	Sen. A&S	St. Helena
Ennis, Joseph J.	Ev. B.A.	Palo Alto
Enos, Garry C.	Ev. B.A.	San Jose
Enos, Leonard J.	Jun. Engr.	Niles
Enos, Mervin E.	Ev. B.A.	San Jose
Enos, Ronald W.	Jun. B.A.	Los Banos
Enright, Michael A.	Sen. B.A.	Los Angeles
Eppler, Robert A.	Soph. Engr.	San Carlos
Eppler, William J.	Soph. Engr.	San Carlos
Erbst, Richard N.	Soph. B.A.	Orofino, Idaho
Erickson, Raymond A.	Ev. B.A.	San Jose
Erle, Charles E.	Sub.-Sr. A&S	Oakland
Ernst, Leo J.	Ev. B.A.	Moffett Field
Eschen, Donald L.	Ev. B.A.	Niles
Escobar, Antonio P.	Jun. B.A.	Crows Landing
Evans, David W.	Soph. Engr.	Pasadena
Evans, Donald L.	Law II	San Jose
Fairbanks, Jack G.	Law I	Stockton
Faith, Michael D.	Soph. Engr.	San Marino
Fajardo, Raoul J.	Ev. B.A.	San Jose

Fanger, Babette A.	Ev. B.A.	Los Gatos
Fanjul, Estrada L.	Ev. B.A.	Mountain View
Fantham, John A.	Soph. Engr.	San Mateo
Farley, Kenneth L.	Jun. Engr.	Santa Clara
Fasani, Joan A.	Nrs. A&S	Palo Alto
Faulk, Boyd A.	Ev. B.A.	San Jose
Favorito, Donald J.	Sen. Engr.	Cupertino
Favro, Philip C.	Jun. A&S	San Francisco
Federico, Tony F.	Ev. B.A.	Santa Clara
Feeley, James C.	Sen. A&S	San Mateo
Ferguson, Dennis B.	Jun. B.A.	Portland, Oregon
*Fernandez, Gustavo D.	Spec. A&S	Phoenix, Arizona
Ferrante, Russell	Ev. B.A .	San Jose
Ferrara, Elvira A.	Nrs. A&S	Los Altos
Ferrari, Anthony D.	Soph. Engr.	San Francisco
Ferrari, Burke A.	Soph. B.A.	Stockton
Ferullo, Joseph F.	Fr. Engr.	San Jose
Figini, William P.	Spec. A&S	Santa Clara
Figone, Norman R.	Ev. B.A.	San Jose
Filice, Bruney M.	Sen. B.A.	Campbell
Filice, Joseph A.	Law Aud.	San Jose
Filice, William G.	Law II	San Jose
Filippini, Louis B., Jr.	Sen. B.A.	Colma
*Finnegan, Peter M.	Fr. A&S	San Francisco
Finney, Rosemary	Nrs. A&S	Salinas
Finney, Timothy R.	Jr. A&S	Salinas
Finocchio, Arnold J.	Soph. B.A.	San Rafael
Firpo, James G.	Sen. Engr.	Stockton
Fisher, Gary E.	Jr. A&S	San Jose
FitzGerald, Michael F.	Fr. A&S	Los Olivos
Fitzgerald, Richard E.	Soph. Engr.	Ivanhoe
Flaaten, Terrance P.	Fr. B.A.	Pasadena
Flanagan, Terry M.	Soph. A&S	Arcadia
Flint, William K.	Soph. B.A.	Oakland
Flores, Donald J.	Sen. A&S	San Jose
Florian, Robert E., Jr.	Fr. A&S	Downey
Flynn, Daniel C.	Fr. A&S	San Francisco
*Flynn, Robert M.	Soph. A&S	San Francisco
Foley, Paul L.	Soph. A&S	Hayward
Fong, Wilfred Q.	Sen. Engr .	San Francisco
Ford, James T.	Soph. A&S	Stockton
Ford, Terrence J.	Law II	Stockton
*Foree, Donald C.	Jun. A&S	San Jose
Forst, Gilbert L.	Fr. Engr.	San Carlos
Fortney, Roy L.	Ev. B.A.	Palo Alto
Fotenos, Dion	Soph. A&S	San Francisco
Fowler, Robert H.	Ev. B.A.	Los Gatos
Fox, Dennis S.	Ev. B.A.	Redwood City
Fox, Gabriel	Ev. B.A.	San Jose
Fox, Robert C., Jr.	Fr. Engr.	Menlo Park
Foy, Thomas J.	Ev. B.A.	San Jose
Francis, Ben C.	Law III	Los Gatos
Frandler, Monroe	Law II	San Jose
Frankel, Marvin	Law I	San Jose
Frasse, I. Benjamin	Jun. A&S	San Jose
*Fratini, Romano R.	Spec. A&S	Elko, Nevada

Frederick, Frank	Ev. B.A.	San Jose
Free, Lloyd R.	Fr. A&S	Santa Clara
Freeman, James N.	Ev. B.A.	Salinas
Freitas, Joseph A., Jr.	Fr. A&S	Atwater
Freitas, Joseph R., Jr.	Fr. A&S	Vallejo
Frizzell, Glenn L.	Soph. A&S	San Jose
Froess, Philip A.	Soph. Engr.	Oakland
Fruhling, Frederick P.	Soph. B.A.	Glendale
Fuchslin, Robert M.	Soph. A&S	San Francisco
Gaddis, John L.	Jun. Engr.	San Mateo
*GaGan, Charles R.	Soph. A&S	San Francisco
Galiotto, Nicholas B.	Sen. A&S	San Jose
Gallagher, Edward S.	Soph A&S	Piedmont
Gallagher, John B.	Ev. B.A.	San Jose
Galli, Roy A.	Soph. Engr.	Rio Vista
Gallucci, Joseph R.	Jun. B.A.	San Jose
Gallucci, Richard A.	Ev. B.A.	San Jose
Galvin, Beth Ann	Nrs. A&S	San Jose
Garcia, Joseph R.	Jun. B.A.	San Francisco
Gardella, John L.	Sen. A&S	Burlingame
Gardella, Peter C.	Ev. B.A.	Santa Clara
Gardiner, George M.	Soph. A&S	Oakland
Garibaldi, Richard A.	Sen. A&S	Stockton
Gass, Charles B., Jr.	Fr. Engr.	Phoenix, Arizona
Gathings, Edwin M.	Soph. B.A.	Orinda
Gaynor, Robert C.	Ev. B.A.	San Jose
Geerling, Bernard J.	Ev. B.A.	Cupertino
Geerling, Herman J.	Fr. B.A.	Cupertino
George, Robert A., Jr.	Soph. Engr.	Stockton
Gerecke, August R.	Sr. Engr.	Hasbrouck Heights, New Jersey
Ghiorso, Gloria M.	Ev. B.A.	San Jose
Giachini, Walter R.	Fr. A&S	San Francisco
Giacomini, Donald E.	Soph. A&S	San Francisco
Giacomini, Thomas J.	Fr. Engr.	Petaluma
Giammona, William V.	Soph. B.A.	San Jose
Giannini, David T.	Fr. A&S	Hillsborough
Giannini, Gloria M.	Ev. B.A.	San Jose
Giannini, Peter A.	Soph. A&S	Santa Clara
Giffen, William R.	Law I	Tracy
Gill, James F.	Jun. A&S	San Jose
Gilley, Curtis W.	Sen. Engr.	San Jose
Gilley, Evelyn M.	Ev. B.A.	San Jose
Gillmor, Gary G.	Sen. A&S	San Francisco
Ginella, Thomas J.	Soph. B.A.	San Francisco
Giraudo, Joseph J.	Soph. Engr.	San Francisco
Girolami, Aldo J.	Fr. A&S	San Jose
Gissler, William A.	Sen. Engr.	San Francisco
Giusti, David C.	Sub-Sen. B.A.	San Mateo
Givvin, Gregory L.	Soph. B.A.	Los Angeles
Glaab, Joseph H.	Jun. B.A.	Pomona
Glavinovich, Gary P.	Jun. A&S	Albany
Gliebe, Richard F.	Fr. B.A.	Santa Rosa
Gnekow, Michael T.	Fr. A&S	San Jose

*Godo, Paul J.	Spec. A&S	Los Angeles
Goeas, Gordon L.	Sen. Engr.	Honolulu, Hawaii
Goeppele, Hermann A.	Fr. A&S	Redwood City
Goggin, William A.	Fr. A&S	Redwood City
Goicovich, John S.	Sen. A&S	Gilroy
Golden, Joseph M., Jr.	Jun. B.A.	San Francisco
Golder, Irving D.	Ev. B.A.	Redwood City
Gonsalves, Arthur J.	Ev. B.A.	San Jose
Good, John D.	Ev. B.A.	Sunnyvale
Goode, Timothy D.	Sen. A&S	Redwood City
Goodere, Philip J.	Ev. B.A.	Saratoga
Goodfellow, Jack W.	Sen. Engr.	Oakland
Goodhue, Louis J.	Sen. A&S	Redwood City
Gosk, Jon B.	Fr. B.A.	San Mateo
Goss, Joseph H.	Ev. B.A.	Palo Alto
Gottwals, Donald C.	Jun. Engr.	Santa Clara
Gowing, Philip D.	Ev. B.A.	Santa Clara
Grace, Nicholas T.	Jun. A&S	Pasadena
Grant, John W., Jr.	Fr. Engr.	Altadena
Grant, Ronald E.	Ev. B.A.	Santa Clara
Granucci, Gerard E.	Fr. A&S	San Francisco
Gray, William T.	Ev. B.A.	Atherton
Greene, Carol A.	Nrs. A&S	San Francisco
Greene, Joseph F.	Sen. A&S	Bakersfield
Greenwood, Daniel D.	Soph. B.A.	San Mateo
Gregory, Robert F.	Soph. A&S	Los Angeles
Gregory, William M.	Fr. B.A.	Los Angeles
Gregov, Joseph J.	Fr. Engr.	Preko, Yugoslavia
Griffin, Donald J.	Soph. Engr.	Bronx, New York
Griffin, Francis C.	Jun. A&S	San Mateo
*Grimaldi, Robert	Soph. A&S	San Jose
Grinsell, Patrick J.	Fr. A&S	Napa
Grinsell, Robert C.	Soph. Engr.	Napa
Guare, Edward J.	Sen. B.A.	Chicago, Illinois
Guerdet, Steven J.	Ev. B.A.	Palo Alto
*Guettinger, Roger J.	Spec. A&S	Oakland
Guevara, Oscar S.	Ev. B.A.	San Jose
Guglielmi, Robert G.	Jun. Engr.	San Francisco
Guilbert, Elbert D.	Ev. B.A.	San Jose
*Guilhamet, James N.	Spec. A&S	Hollister
Gunderson, Edwin J.	Soph. B.A.	San Francisco
Gunther, Norman G.	Jun. A&S	El Paso, Texas
Gutierrez, Gabriel A.	Soph. A&S	Pasadena
Hack, Donald C.	Jun. Engr.	Menlo Park
Hadad, Richard W.	Ev. B.A.	San Jose
Hadwin, James F.	Jun. A&S	Pasadena
Hagan, Charles J.	Fr. B.A.	La Jolla
Hagan, James M.	Fr. A&S	Portland, Oregon
Haggerty, Patrick F.	Fr. A&S	Encino
Hall, John W.	Soph. A&S	Anaheim
Hall, Kenyth S.	Ev. B.A.	San Jose
Hall, Richard L.	Soph. B.A.	San Marino
Hall, Robert J.	Soph. Engr.	Grass Valley
Hamagushi, Howard	Ev. B.A.	San Mateo

Hamann, Michael A.	Soph. A&S	Manhattan Beach
Hamilton, Hubert T.	Sen. B.A.	McCloud
Hamma, Jerald T.	Jun. Engr.	San Francisco
Hammond, Robert S.	Ev. B.A.	San Marino
Hanifin, Timothy J.	Law III	Gustine
Hankal, James C.	Jun. A&S	San Jose
Hankal, Michael C.	Fr. B.A.	San Jose
*Hanlon, Daniel M.	Soph. A&S	Redwood City
Hannigan, Thomas F.	Ev. B.A.	San Jose
Hansen, Michael	Soph. A&S	Belmont
Hansen, Michael P.	Jun. Engr.	Inglewood
Hansen, Ryan R.	Soph. A&S	Santa Clara
Hansen, Wilbur W.	Soph. A&S	Menlo Park
Hansmann, Henry C.	Fr. B.A.	Salt Lake City, Utah
Harley, William E.	Soph. A&S	Milwaukee, Wisconsin
Harper, Douglas M.	Soph. A&S	Fresno
Harrigan, Richard L.	Soph. A&S	San Jose
Harris, Robert M.	Ev. B.A.	San Jose
Hart, George F.	Ev. B.A.	San Jose
Hastings, Thomas C.	Soph. A&S	Santa Clara
Havens, John A.	Fr. B.A.	Memphis, Tennessee
Hayes, John R.	Jun. B.A.	Los Angeles
Heafey, Richard J.	Sen. A&S	Piedmont
Heald, Arthur R.	Ev. B.A.	San Jose
Healey, James A.	Sen. B.A.	San Jose
Healy, David B.	Sen. A&S	Los Angeles
Heaphy, John R.	Sub.-Sen. A&S	Menlo Park
Hedberg, Thomas M.	Soph. B.A.	Beverly Hills
Hefter, Thomas G.	Sen. A&S	Compton
Helmer, John C.	Fr. Engr.	Mill Valley
Henderson, Arthur J.	Ev. B.A.	Menlo Park
Henderson, Carol M.	Ev. B.A.	Palo Alto
Hennen, Michael D.	Sen. A&S	Elko, Nevada
Henschke, Bernhard F.	Sen. Engr.	Bakersfield
Herb, Nicholas J.	Fr. B.A.	Bellingham, Washington
Herbst, Paul A.	Soph. A&S	Oregon City, Oregon
Herdocia, Jorge U.	Jun. Engr.	Leon, Nicaragua
Hernandez, Fernando V.	Fr. Engr.	San Jose
Heron, Ronald F.	Jun. A&S	Redondo Beach
Herzog, Martin J.	Ev. B.A.	San Jose
Herzog, Michael	Fr. B.A.	Clayton, Missouri
Hester, Joseph M.	Soph. Engr.	Oakland
Heyfron, Evelyn L.	Ev. B.A.	San Jose
Higashiuchi, Jon M.	Soph. Engr.	Mountain View
Higbee, John D.	Sen. B.A.	San Carlos
Higgins, David M.	Jun. Engr.	Sacramento
Higgins, Lawrence F.	Soph. B.A.	Altadena
Higgins, Richard L.	Ev. B.A.	San Jose
Higuera, Edward A.	Jun. A&S	Holtville
Hill, Floyd S.	Law I	Santa Cruz
Hill James L.	Soph. Engr.	Sonoma
Hill, Larry A.	Soph. A&S	San Francisco
Hitchman, Philip H.	Ev. B.A.	San Jose
Hobbs, William C.	Soph. A&S	Los Angeles

Hoedendyk, Jens P.	Jun. Engr.	Doorn, Holland
Hoffman, James P.	Fr. A&S	Menlo Park
Hoffman, John P.	Jun. Engr.	San Diego
Homan, Howard G. K.	Fr. A&S	Salinas
Hoover, Robert L.	Law II	Auburn
Hopkins, Carl L.	Jun. Engr.	Watsonville
Hopkins, Carol A.	Ev. B.A.	San Jose
Horgan, James J.	Ev. B.A.	Cupertino
Horner, Hubert T.	Ev. B.A.	San Jose
Horning, George L.	Ev. B.A.	San Mateo
House, Stanley J.	Jun. B.A.	Sonora
Hu, Michael J.	Fr. Engr.	Kowloon Tong, Hong Kong
Huber, Rupert W.	Ev. B.A.	Sunnyvale
Humblet, Michel	Soph. Engr.	Santa Clara
Hunt, Veryle E.	Spec. A&S	Santa Clara
Huntington, Charles P.	Ev. B.A.	San Jose
Hurthere, Roger J.	Fr. A&S	San Mateo
Hutcheson, William J.	Jun. B.A.	Visalia
Ingoglia, Donald D.	Fr. A&S	Sacramento
Ipsen, Richard F.	Ev. B.A.	Agnew
Ivanovich, John L.	Jun. B.A.	Watsonville
Jacklich, George L.	Fr. Engr.	Manteca
Jackson, Herman O.	Ev. B.A.	Sunnyvale
Jacobberger, Donald H.	Sen. Engr.	San Francisco
Jagger, Jon E.	Fr. A&S	Phoenix, Arizona
Janelli, Anthony J.	Sen. A&S	Visalia
Janosko, Eugene S.	Sen. B.A.	North Hollywood
Jardine, John G., Jr.	Soph. A&S	Tracy
Jenkins, Louis W.	Soph. A& S	Atherton
Jenkins, William H.	Ev. B.A.	Santa Clara
Jennings, Elmer R.	Law III	Corning
Jensen, Charles F.	Ev. B.A.	San Jose
Jewell, Alden C.	Ev. B.A.	San Jose
Jirgal, Robert M.	Ev. B.A.	Saratoga
Johansing, Harry G.	Jun. A&S	Pasadena
Johnck, John J.	Soph. Engr.	San Francisco
Johns, Michael H.	Soph. B.A.	Seattle, Washington
Johnson, Arnold C.	Ev. B.A.	Santa Clara
*Johnson, David W.	Fr. A&S	San Carlos
Johnson, Donald A.	Soph. A&S	Los Angeles
*Johnson, Donald H.	Spec. A&S	Sacramento
Johnson, Gordon E.	Ev. B.A.	San Jose
Johnson, Harmon W.	Soph. Engr.	Vista
Johnson, James H., Jr.	Sen .A&S	Los Angeles
Johnson, Jerome J.	Ev. B.A.	San Jose
Johnson, John C.	Fr. B.A.	Ukiah
Johnson, Richard L.	Ev. B.A .	Santa Clara
Johnson, Terry	Ev. B.A.	Los Gatos
Johnson, William F.	Soph. B.A.	Newport Beach
Johnston, Timothy H.	Fr. A&S	Burbank
*Joncich, Marion A.	Spec. A&S	San Pedro
*Jones, Bartlett F.	Fr. A&S	San Francisco
Jones, Thomas E.	Ev. B.A.	San Jose
Jones, William C.	Sen. A&S	Anaheim

Jones, William V.	Fr. B.A.	San Francisco
Jordan, Robert S.	Law I	San Jose
Jorgensen, John G.	Ev. B.A.	Saratoga
Joseph, John B.	Fr. B.A.	Sacramento
*Journey, Richard J.	Soph. A&S	Salem, Ohio
Kallberg, Gayle E .	Ev. B.A.	Sunnyvale
Kaska, John A.	Jun. A&S	Diablo Heights, Canal Zone
Katavich, Lucille A.	Nrs. A&S	San Jose
*Kavanaugh, Edward J.	Fr. A&S	San Francisco
Keating, John M.	Sen. A&S	Sacramento
*Keating, John P.	Soph. A&S	San Francisco
Keenan, Michael P.	Fr. A&S	La Jolla
Keenan, William J.	Fr. A&S	Sacramento
Kehoe, Dennis J.	Soph. B.A.	Sacramento
Keitges, Cyril A.	Sen. A&S	Merced
Kelley, Anthony D.	Sen. Engr.	San Luis Obispo
Kelley, Duncan J.	Jun. B.A.	San Jose
Kelley, Thomas J.	Sen. A&S	Los Angeles
Kelley, Searle M.	Jun. A&S	Burley, Idaho
Kenefick, Francis J.	Fr. Engr.	Pleasant Hill
Kennedy, Dennis M.	Soph. Engr.	San Jose
Kenning, Mark A.	Sen. Engr.	Burlingame
Kenny, James D.	Soph. B.A.	Edmonds, Washington
Kenny, James Donald	Soph. A&S	Redwood City
Kentzel, James V.	Soph. Engr.	San Francisco
Kerhulas, Ted P.	Jun. A&S	Belmont
Kern, Joseph P. D.	Law I	Alhambra
Kernan, Robert S.	Ev. B.A.	Sunnyvale
Kerner, Peter C.	Soph. A&S	San Francisco
Kerr, Jerrold E.	Fr. A&S	San Francisco
Kidd, Donald A.	Fr. A&S	San Francisco
Kiechler, Richard J.	Sen. A&S	Alhambra
Kimball, Peter S.	Ev. B.A.	Carmel
Kimball, Thomas F.	Law II	San Jose
Kincaid, Dell	Ev. B.A.	San Jose
Kinerk, Robert E.	Fr. B.A.	Ketchikan, Alaska
King, Edward M.	Soph. A&S	San Francisco
King, Malcolm A.	Sen. A&S	Los Angeles
King, Michael T.	Fr. Engr.	San Francisco
Kinser, Dennis E.	Sen. B.A.	Stockton
Kinser, Larry D.	Soph. B.A.	Stockton
Kinsey, Thomas D.	Jun. A&S	Inglewood
Kirby, James M.	Fr. Engr.	San Francisco
Kirby, John C.	Soph. B.A.	San Jose
Kirkish, Delano G.	Sen. Engr.	Sunnyvale
Kirrene, Michael J.	Soph. A&S	Grass Valley
Kirrene, Robert L.	Soph. B.A.	Sacrameto
Klaren, Henry J.	Soph. B.A.	Oakland
Klauer, William R.	Jun. Engr.	Salinas
Klausner, John T.	Fr. A&S	Pasadena
Klein, Harold	Ev. B.A.	Palo Alto
Kloepping, Roger J.	Soph. A&S	Castro Valley
Knego, Stephen P.	Sen. B.A .	Watsonville
Knight, Arthur J.	Ev. B.A .	San Jose

Knorp, Albert F., Jr.	Law I	San Carlos
Kobritz, Richard L.	Fr. A&S	San Francisco
Koch, Curtis W.	Ev. B.A.	Redwood City
Koehmstedt, William F.	Jun. Engr.	South Pasadena
Koepp, Claudette M.	Nrs. A&S	Reno, Nevada
Kohlman, Richard J.	Grad. A&S	San Jose
Kondo, John	Ev. B.A.	Cupertino
Kondo, William A.	Ev. B.A.	San Jose
Kontich, Peter	Ev. B.A.	Santa Clara
Kopp, Charles J.	Ev. B.A.	San Jose
Kopp, Harold J.	Sen. Engr.	San Francisco
Koppes, Larry J.	Ev. B.A.	San Jose
*Korbel, James P.	Fr. A&S	San Jose
Korte, George W.	Jun. A&S	Oakland
Kosinski, James J.	Sen. A&S	Santa Cruz
Kracht, John A.	Soph. A&S	Glenview, Illinois
Kramer, Peter R.	Fr. B.A.	Menlo Park
Kreppel, Frederick E.	Ev. B.A.	Santa Clara
Krickeberg, Roy W.	Law II	San Jose
Krilanovich, Carol A.	Nrs. A&S	Monterey
Krug, Paul H.	Ev. B.A.	Campbell
Kulish, Jon N.	Jun. Engr.	Hollister
Kulish, Peter J.	Fr. A&S	San Jose
Kurilich, Matthew, Jr.	Law II	Mountain View
Kwapil, Richard O.	Soph. B.A.	Reno, Nevada

La Croix, Dale W.	Ev. B.A.	Campbell
La Croix, Edward R.	Law II	San Jose
Ladd, Nancy	Nrs. A&S	Brentwood
Laden, John L., Jr.	Fr. Engr.	Medford, Oregon
Ladrech, Edward A.	Soph. A&S	San Francisco
La Flamme, Frank C.	Soph. Engr.	Santa Barbara
Lafranchi, Arthur L.	Sen. A&S	Nicasio
Lagomarsino, Paul M.	Jun. A&S	Sacramento
Laitinen, Malcolm T.	Jun. B.A.	Menlo Park
Lally, Bartholomew C., Jr.	Jun. A&S	San Francisco
Lalor, Harry N.	Jun. Engr.	Santa Rosa
Lamb, Emmrich D., Jr.	P/T A&S	San Jose
*Lambers, Noel R.	Jun. A&S	Daly City
Lambert, Leon J.	Jun. B.A.	St. Helena
Lane, Howard B.	Sen. Engr.	Sunnyvale
Lane, John C., Jr.	Sen. Engr.	San Jose
Laney, Peter O.	Sen. B.A.	Yuba City
Lang, Carl T.	Sen. Engr.	Sacramento
Lang, Paul C.	Jun. Engr.	Formosa, China
Langston, Robert A.	Sen. B.A.	Merced
Larrabee, Richard B.	Fr. A&S	Sacramento
Larrey, Martin F.	Soph. A&S	Fresno
Larsen, Rolf R.	Law I	Pittsburgh, Pennsylvania
Larson, Charles J.	P/T Engr.	Los Altos
Laufer, Stanley J.	Fr. A&S	South San Francisco
Lauriola, Thomas N.	Ev. B.A.	San Jose
Lavorato, Sam A.	Jun. B.A.	Salinas
Lawrence, Robert A.	Soph. B.A.	San Jose
Lawson, James C.	Ev. B.A.	Menlo Park

Lawson, John K.	Fr. Engr.	Studio City
Leach, Andrew B., Jr.	Sen. Engr.	Los Altos
Leach, Robert C.	Fr. Engr.	Los Altos
Leatham, John P.	Soph. B.A.	Burlingame
Lebaudour, Richard E.	Ev. B.A.	Mountain View
Le Deit, James P.	Fr. A&S	San Jose
Lee, Edward M., Jr.	Fr. B.A.	Los Angeles
Lee, Martin M.	Soph. Engr.	San Francisco
Legorreta, Raphael A.	Fr. A&S	San Francisco
Leick, Margaret J.	Ev. B.A.	Campbell
Leininger, James E.	Sen. A&S	San Jose
Lellman, Philip J.	Fr. A&S	San Francisco
*Lenegan, John F.	Fr. A&S	Phoenix, Arizona
Lent, Howard L.	Ev. B.A.	San Jose
Lenz, Garret W.	Ev. B.A.	San Jose
Leone, Frank, Jr.	Sen. Engr.	San Jose
Leslie, Richard B., Jr.	Ev. B.A.	Los Gatos
Lester, Daniel E.	Soph. B.A.	Watsonville
Lester, John A.	Sen. A&S	Los Angeles
L'Estrange, Gerald C.	Sen. A&S	Reno, Nevada
Lestum, Dale F.	Soph. B.A.	Palo Alto
Le Vasseur, Thomas H.	Jun. Engr.	Santa Clara
Lewis, George T.	Ev. B.A.	San Jose
Lewis, John L.	Fr. A&S	Sunnyvale
Lewis, Robert W.	Ev. B.A.	Los Altos
Leyva, David T.	Ev. B.A.	San Jose
Li, Ronald G. M.	Soph. Engr.	Honolulu, Hawaii
Lichter, Louis T.	Law I	Long Beach
Lid, Dennis R.	Jun. A&S	San Francisco
Lighthouse, Bernard F.	Fr. Engr.	Piedmont
Lillevand, Peter M.	Fr. B.A.	Alameda
Limberatos, A.	Ev. B.A.	San Jose
Linares, Francisco J., Jr.	Soph. B.A.	Panama, Rep. of Panama
Lind, Charles F., Jr.	Ev. B.A.	San Jose
Lintz, Donald E.	Jun. Engr.	Watsonville
Lipari, Paul J.	Ev. B.A.	Campbell
Littman, Donald F.	Ev. B.A.	San Jose
Livak, Nicholas J.	Jun. A&S	San Jose
Lobdell, Warren L., Jr.	Soph. A&S	Pasadena
Lofano, Leonard	Ev. B.A.	San Jose
Loftus, Michael J.	Jun. Engr.	Redwood City
Lonergan, James A.	Fr. Engr.	Los Angeles
Long, Raymond A.	Jun. Engr.	Santa Clara
Longshore, Wells J.	Soph. A&S	Glendale
Lopes, Ronald P.	Jun. B.A.	Vallejo
Lopez, Carlos U.	Sen. A&S	Parral, Chile
Lopez, Firmin O.	Ev. B.A.	Santa Clara
Lopina, John M.	Ev. B.A.	Cupertino
Louis, Edwin B.	Jun. Engr.	Molokai, Hawaii
*Lounibos, John B.	Spec. A&S	Petaluma
Loustau, Jeannette H.	Ev. B.A.	Hollister
Love, Ivan D.	Ev. B.A.	Saratoga
Lucchesi, Joseph R.	Jun. Engr.	San Jose
Lugo, Robert J.	Jun. B.A.	Los Angeles
Luke, Leston E.	Ev. B.A.	Los Altos

Lundy, Virgil W.	Ev. B.A.	San Jose
Luschar, Kenneth R.	Soph. Engr.	Castro Valley
Lustig, Julius	Ev. B.A.	San Jose
Lynch, Edward J.	Fr. A&S	San Francisco
Lynch, Jerry J.	Fr. A&S	San Mateo
Lynch, Mary F.	Nrs. A&S	Sacramento
Lynch, Theodore P., Jr.	Jun. Engr.	San Mateo
Lyons, Kenneth P.	Fr. A&S	Long Beach
Machado, Robert J.	Jun. Engr.	Byron
MacInnes, Freyja C.	Ev. B.A.	San Jose
MacMillan, James S.	Fr. A&S	Oakland
Madonna, Paul	Fr. Engr.	Cayucos
Magdlen, James A.	Fr. Engr.	Santa Barbara
Magette, William E.	Ev. B.A.	San Jose
Magnoli, Albert E.	Law I	San Jose
Maguire, David S.	Soph. A&S	Redwood City
Mahoney, Norman P.	Jun. A&S	Glendale
Maino, Lismore T.	Jun .Engr.	Belmont
Majerus, John N.	Soph. Engr.	Arcadia
Major, John T.	Ev. B.A.	Santa Clara
Makus, Chester	Ev. B.A.	San Jose
Malloy, Thomas W.	Jun. A&S	Daly City
Malo, Anthony L.	Ev. B.A.	Los Altos
Malone, Donald E.	Jun. Engr.	North Highlands
Malone, Louis J.	Fr. A&S	Los Angeles
Maloney, James R.	Soph. Engr.	Piedmont
Maloney, Robert A.	Soph. B.A.	San Francisco
Maloney, Thomas O.	Jun. A&S	Piedmont
Malvino, Albert P.	Jun. Engr.	Redwood City
Mangan, James G.	Jun. B.A.	Sacramento
Manlowe, James S.	Soph. B.A.	Kirkland, Washington
Mann, Lindsay A.	Sen. A&S	Botota, Columbia
Manning, Dennis B.	Soph. A&S	Berkeley
Marciel, Robert L.	Ev. B.A.	San Jose
Marinovich, William F.	Law I	Watsonville
Mark, Francis, Jr.	Fr. Engr.	San Francisco
Marlo, John A., Jr.	Law I	Campbell
Marrone, Eugene A.	Soph. B.A.	Pacific Grove
Marrs, Robert F.	Ev. B.A.	San Jose
Marshall, John P.	Jun. A&S	Alhambra
Martin, Clyde C.	Ev. B.A.	Campbell
Martin, George A., Jr.	Law III	San Jose
Martin, Gregory J.	Soph. A&S	San Jose
Martinez, John	Ev. B.A.	Redwood City
Martorano, Americo	Ev. B.A.	Los Gatos
Marquardt, Robert H.	Ev. B.A.	San Jose
Mason, John E.	Sen. A&S	Redwood City
Matalone, Fred J.	Ev. B.A.	Santa Clara
Matalone, James F.	Ev. B.A.	San Jose
Matheu, J. Roberto	Soph. B.A.	Guatamala, Guatamala
Matoske, Andrew T,	Ev. B.A.	Mountain View
Matteoni, Norman E.	Soph. A&S	San Jose
Matteson, Glen S.	Fr. A&S	San Francisco

Mayle, Robert E.	Jun. A&S	Santa Clara
Maynard, Robert T.	Law III	Redwood City
McAloon, James T.	Fr. Engr.	Burlingame
McCain, Mary M.	Nrs. A&S	Crete, Nebraska
McCallion, Neil F.	Soph. Engr.	San Francisco
McClure, Jack R.	Ev. B.A.	San Jose
McCormick, Raynard E.	Fr. Engr.	So. San Francisco
McCormick, Theodore M.	Fr. Engr.	San Mateo
*McCormick, Thomas F.	Jun. A&S	Oakland
McCosker, Dennis W.	Soph. B.A.	Oakland
McCullough, John L.	Sen. Engr.	San Francisco
*McCurdy, Richard L.	Spec. A&S	San Diego
McDevitt, Donald T.	Sen. B.A.	Staten Island, New York
McDonald, Michael P.	Fr. A&S	San Jose
McEnhill, Gerald L.	Sen. A&S	Hollywood
McFadden, Gordon M.	Ev. B.A.	San Jose
McGeeney, Thomas M.	Soph. A&S	Long Beach
McGlinchey, James T., Jr.	Fr. A&S	San Bernardino
McGlynn, Thomas	Soph. A&S	Red Bluff
McGonigle, James P.	Fr. A&S	Pueblo, Colorado
McGough, Richard E.	Soph. Engr.	San Francisco
McGrath, Denis M.	Fr. A&S	Alameda
McGuire, Bernard J.	Soph. Engr.	San Francisco
McGuire, John P.	Sen. Engr.	San Francisco
McGuire, Philip J., Jr.	Ev. B.A.	Centerville
McGuire, William M., Jr.	Jun. Engr.	Castro Valley
McKay, Michael B.	Soph. Engr.	Covina
McKay, William T.	Fr. B.A.	San Francisco
McKeany, Lyle O.	Ev. B.A.	Santa Clara
McKenzie, Michael R.	Sen. B.A.	Palo Alto
McKeon, A. Ryan, Jr.	Soph. B.A.	La Canada
McKeon, Anthony J.	Sen. B.A.	Santa Clara
McLaren, Richard B.	Jun. A&S	Menlo Park
McLaren, William F.	Soph. B.A.	San Francisco
McLaughlin, Donald W.	Soph. Engr.	Palo Alto
McLellan, Francis X.	Fr. A&S	Portland, Oregon
McLin, Howard R.	Ev. B.A.	San Jose
McMahon, Mary C.	Ev. B.A.	Menlo Park
McNamee, James W.	Law II	Monrovia
McQueeny, James T.	Jun. A&S	Kansas City, Missouri
McWhorter, Mary J.	Ev. B.A.	San Jose
Mead, John H.	Soph. A&S	Gilroy
Meares, Lawrence G.	Fr. Engr.	Sherman Oaks
Meek, Thelma	Ev. B.A.	San Carlos
Melanephy, James P.	Fr. Engr.	San Francisco
Mendoza, Anthony J.	Ev. B.A.	Sunnyvale
Menne, Frank A.	Sen. B.A.	Ducor
Merrill, Diana M.	Nrs. A&S	Niles
Merriman, Stanley F.	Sen. A&S	San Rafael
Mertens, Arnold W.	Ev. B.A.	Mountain View
Mertens, Lucille E.	Ev. B.A.	Mountain View
Mesplay, Jay K.	Jun. Engr.	Mariposa
Meuldijk, Thomas	Soph. Engr.	San Jose
Meyer, Fred R.	Fr. Engr.	Redwood City
Meyer, Philip L.	Fr. Engr.	Phoenix, Arizona

Mikel, Kenneth R.	Fr. B.A.	Vallejo
Mickley, Matt F.	Ev. B.A.	Cupertino
Middleton, Richard M.	Jun. B.A.	Pasadena
Mieuli, James P.	Ev. B.A.	San Jose
Mijares, Carmen D.	Law I	San Jose
Miller, Dennis F.	Soph. A&S	Santa Clara
Miller, George W.	Ev. B.A.	Campbell
Miller, Gregory J.	Law II	Santa Clara
Miller, Harold	Ev. B.A.	San Jose
Miller, John E.	Soph. Engr.	Lodi
Miller, Joseph A.	Sen. B.A.	Portland, Oregon
Miller, Raymond F., Jr.	Ev. B.A.	San Jose
Miller, Thomas K.	Ev. B.A.	San Jose
Miller, William C., Jr.	Soph. Engr.	Santa Clara
Mills, David J.	Sen. B.A.	Pentiction, British Columbia
Milton, Roger A.	Jun. Engr.	Elk Grove
Minnerly, James E.	Law I	Santa Clara
Miraglia, Terence J.	Fr. Engr.	Oakland
Mitchell, James W.	Jun. A&S	Atherton
Mitchell, Medard T.	Law I	Menlo Park
Moceo, Ralph F.	Sen. B.A.	Santa Cruz
Mohun, George E.	Jun. A&S	Menlo Park
Molinari, John S.	Fr. Engr.	Oakland
Molinaro, Eugene W.	Sen. Engr.	La Habra
Mon Pere, John T.	Fr. A&S	Fresno
Mooney, Frank C.	Sen. Engr.	Redmond, Oregon
Mooney, James R.	Fr. B.A.	Redmond, Oregon
Mooney, John E.	Jun. B.A.	Redmond, Oregon
Moore, Clarence C.	Law I	San Jose
Moran, Charles E.	Ev. B.A.	Santa Clara
Moran, Leslie K.	Ev. B.A.	San Francisco
Moraza, Manuel R.	Jun. Engr.	Cebu City, Philippines
Morey, Richard J.	Fr. A&S	Atherton
Morey, Robert F.	Fr. A&S	Atherton
Moriarity, Robert B.	Fr. Engr.	Newark, New Jersey
Morin, James B.	Soph. B.A.	Mountain View
Morioka, Herbert H.	Ev. B.A.	Mountain View
Morrey, James W., Jr.	Law I	Palo Alto
Morro, Ronald P.	Fr. A&S	San Mateo
Morton, Charles L.	Law Aud.	Santa Clara
Moses, William J.	Jun. A&S	Yokohama, Japan
Motta, Ronald J.	Law II	Carmel
Mowatt, William D.	Sub.-Sen. A&S	Stockton
Moynihan, Cornelius T.	Soph. A&S	San Jose
Mullin, Michael F.	Soph. Engr.	San Francisco
Munday, Terence B., Jr.	Fr. B.A.	Menlo Park
Munding, Carl A.	Fr. B.A.	Santa Maria
Murakami, Leslie S.	Sen. A&S	Honolulu, Hawaii
Murakami, Melvyn T.	Fr. B.A.	Honolulu, Hawaii
Murphy, Dennis M.	Law I	Santa Cruz
Murphy, John M.	Jun. B.A.	Nelson
Murphy, John R.	Sub.-Sen. A&S	Sacramento
Murphy, John T.	Sen. Engr.	San Francisco
Murphy, Kenneth J., Jr.	Sen. A&S	Los Angeles

Murphy, Patricia L.	Ev. B.A.	San Jose
Murphy, Peter H.	Soph. B.A.	Santa Cruz
Murray, William D., Jr.	Fr. A&S	Butte, Montana
Murtha, Daniel F.	Soph. B.A.	San Jose
Musante, Thomas C.	Fr. A&S	Los Angeles
Myers, Curtis J.	Ev. B.A.	Palo Alto
Nagle, John M.	Soph. A&S	San Francisco
Necoechea, William M.	Ev. B.A.	San Jose
Nedom, Martin E.	Fr. A&S	San Jose
Nedom, Norwood A.	Soph. A&S	Salinas
Negri, Fred L., Jr.	Sen. B.A.	Napa
Nelson, Daniel F.	Jun. A&S	Sacramento
Nelson, Gwendolyn A.	Nrs. A&S	Santa Clara
Nelson, James E.	Ev. B.A.	Los Altos
Neuman, Paul R.	Jun. A&S	Carmel
Nelson, Thomas C.	Fr. Engr.	Livermore
Newton, John S.	Fr. A&S	Fresno
Nichols, Jacques B.	Jun. A&S	Portland, Oregon
Nicholson, Allan W.	Law I	San Jose
Nicoletti, John A.	Sen. Engr.	Millbrae
Nino, Edward D.	Law II	Los Gatos
Nishikawa, Junji	Fr. Engr.	San Mateo
Nisich, Gaylen L.	Sen. Engr.	San Jose
Nistler, Gordan A.	Jun. Engr.	Santa Barbara
Nobleman, Robert A.	Fr. B.A.	Los Altos
Nobriga, Frank J.	Sen. B.A.	Santa Clara
Nolan, John E.	Law I	Oakland
North, Joseph E.	Sen. B.A.	Billings, Montana
*Norton, James L.	Soph. A&S	San Francisco
Norton, Joseph A.	Law I	San Jose
Nottingham, Cromwell B.	Jun. B.A.	San Francisco
Nougues, Alfred V.	Ev. B.A.	Mountain View
Nucci, Donald A.	Sen. B.A.	Salinas
Nulk, Robert A.	Sen. Engr.	Sacramento
Nunes, Carl S.	Ev. B.A.	San Jose
Nunn, Leond R.	Ev. B.A.	Mountain View
Nutcher, Lawrence E.	Ev. B.A.	Santa Cruz
Oberholzer, John A.	Fr. A&S	North Hollywood
O'Brien, Eugene G.	Ev. B.A.	San Jose
*O'Brien, James F.	Fr. A&S	San Francisco
O'Brien, James Raymond	Sen. A&S	San Mateo
O'Brien, James Richard	Fr. B.A.	Mountain View
O'Brien, Richard C.	Fr. Engr.	Medina, New York
O'Callaghan, Michael J.	Sen. Engr.	San Francisco
O'Connor, Donald L.	Law III	Richmond
O'Connor, Douglas R.	Law III	San Jose
O'Connor, John A.	Sen. A&S	Mountain View
O'Connor, John P.	Ev. B.A.	Hayward
O'Connor, Joseph P.	Soph. B.A.	Pasadena
O'Day, Dennis J.	Fr. Engr.	Juneau, Alaska
Odom, Ernest W.	Law Aud.	San Jose
O'Donnell, Vincent H.	Jun. B.A.	Belmont
Ohlfs, Ronald H.	Soph. Engr.	Chester
O'Keefe, James M.	Grad. A&S	San Jose

O'Keefe, Thomas D.	Fr. B.A.	Sacramento
O'Laughlin, Thomas N.	Soph. Engr.	Pasadena
Olds, Charles R.	Ev. B.A.	Palo Alto
Oliva, George J. M.	Fr. B.A.	South Pasadena
Oliver, David A.	Fr. Engr.	San Jose
Oliver, William F.	Fr. Engr.	Menlo Park
Olivie, John P.	Soph. A&S	Carmel
Olivier, Julien J.	Ev. B.A.	San Jose
*Olivo, Stephen G.	Spec. A&S	San Jose
Olness, Richard A.	Soph. B.A.	Loomis
*Olsen, Charles R.	Jun. A&S	Alameda
O'Malley, James R.	Sen. A&S	San Francisco
O'Meara, Harry L.	Ev. B.A.	Santa Clara
Oneal, Daniel	Law I	San Jose
O'Neill, Edwin R.	Fr. A&S	Fresno
Onishi, Richard T.	Sen. B.A.	San Jose
O'Rourke, James P.	Jun. B.A.	Walla Walla, Washington
O'Rourke, Thomas F.	Fr. Engr.	San Jose
Orr, Terrence E.	Jun. Engr.	Lancaster
Orradre, Michel J.	Soph. B.A.	San Ardo
Ortega, Rudy C.	Soph. A&S	San Jose
O'Sullivan, John D.	Fr. Engr.	San Francisco
Owen, Albert S., Jr.	Soph. A&S	San Francisco
Owings, Wallace P.	Jun. B.A.	Los Angeles

Pace, George E.	Fr. Engr.	Santa Clara
Pacheco, Ronald H.	Sen. B.A.	Honolulu, Hawaii
Padilla, Norman F.	Fr. A&S	San Jose
Pagen, John L., Jr.	Ev. B.A.	San Jose
*Palafox, Lorenzo J.	Jun. A&S	San Francisco
Palmer, John M.	Fr. Engr.	Vallejo
Palmtag, James L.	Sen. B.A.	Watsonville
Panetta, Joseph R.	Law III	Carmel Valley
Panetta, Leon E.	Soph. A&S	Carmel Valley
Paoli, Ralph C.	Soph. B.A.	Elko, Nevada
Paquette, Neil R.	Jun. A&S	Phoenix, Arizona
Parada, Ruben I.	Sen. A&S	Obregon, Sonora, Mexico
Paradiso, Robert J.	Ev. B.A.	Campbell
Pardee, William R.	Law I	Woodland Hills
Pardo, Ralph	Fr. Engr.	Santa Cruz
Parker, John T.	Jun. Engr.	Mill Valley
Parks, Marlin C.	Ev. B.A.	San Jose
Partridge, Patrick V.	Fr. A&S	Los Gatos
Passalacqua, Robert H.	Grad. A&S	San Jose
Pasternak, Eulalia M.	Ev. B.A.	Campbell
Patterson, Robert J.	Jun. B.A.	Boulder City, Nevada
Paynton, Richard G.	Sen. B.A.	Woodland, California
Pearl, William F.	Jun. B.A.	Santa Clara
Pedroncelli, Robert B.	Soph. Engr.	Healdsburg
Penitenti, Nancy A.	Ev. B.A.	Fort Bragg
Penna, Albert P.	Fr. B.A.	Redwood City
Penna, Lawrence J.	Fr. Engr.	Redwood City
Penrice, Arnold F.	Ev. B.A.	San Jose
Perasco, Raymond J.	Soph. A&S	Oroville
Perdichizzi, Fiori W.	Jun. B.A.	Santa Clara

Perelli, Rodger W.	Jun. A&S	Santa Rosa
Perez, Alfred A.	Law I	San Jose
Perez, Elida D.	Ev. B.A.	Campbell
Perry, Curtis H.	Ev. B.A.	Cupertino
Peters, Gerald R.	Jun. A&S	San Francisco
Peters, Jeffrey L.	Fr. A&S	Menlo Park
Peters, Robert W.	Fr. Engr.	San Jose
Peterson, Albert W.	Sen. A&S	Whittier
Peterson, Jon W.	Soph. A&S	New York, New York
Petroni, Harold E.	Jun. A&S	South San Francisco
Pfaff, David W.	Ev. B.A.	San Jose
Pfaff, James C.	Sub.-Sen. B.A.	San Jose
Phillips, Billie L.	Jun. Engr.	Santa Cruz
Phillips, Roger B.	Soph. A&S	San Jose
Pickens, Robert L.	Fr. A&S	Modesto
Pinheiro, Gabriel L.	Soph. A&S	Santa Cruz
Pinto, Ronald V.	Fr. A&S	San Francisco
*Pisani, Richard T.	Jun. A&S	San Francisco
Pisenti, Edward J.	Jun. B.A.	Santa Rosa
Pistoresi, Monte D.	Soph. B.A.	Chowchilla
Pizzo, James J.	Sen. Engr.	San Jose
Plageman, Robert C.	Sen. B.A.	Burlingame
Plagmann, Reginald F.	Ev. B.A.	Mountain View
Polk, Hilliard	Sen. A&S	San Jose
Ponzini, Robert G.	Soph. A&S	San Francisco
Poole, David A.	Soph. Engr.	San Diego
Pope, John N., Jr.	Law III	Morristown, New Jersey
Porter, Charles E.	Fr. A&S	Santa Barbara
Powers, Leslie E.	Soph. B.A.	Santa Monica
Powers, Marjorie J.	Ev. B.A.	Palo Alto
Pozas, Richard J.	Fr. B.A.	Sunnyvale
Prack, Cecil A.	Soph. Engr.	Los Altos
Premo, John F.	Ev. B.A.	San Jose
Prescott, Melvin F.	Soph. B.A.	San Francisco
Presley, John D.	Fr. A&S	San Diego
Price, Philip B.	Law I	Chico
Prior, Donald B.	Ev. B.A.	San Jose
Pugliesi, John J.	Ev. B.A.	San Jose
Purl, John D.	Jun. Engr.	Ojai
Pyle, Harry T.	Ev. B.A.	Santa Clara
Quijano, Guillermo E., Jr.	Soph. Engr.	Panama, Rep. of Panama
Quinlan, James F.	Sen. A&S	Forest Hill
Quinn, Francis E.	Soph. B.A.	Seattle, Washington
Quirk, John F.	Law II	Santa Clara
Radovcich, Nick A.	Soph Engr.	San Pedro
Ramm, David	Soph. B.A.	Hayward
Ramos, John L.	Fr. Engr.	San Jose
Ramsey, James W.	Ev. B.A.	Los Altos
Rankin, Robert J.	Law III	San Jose
Rankin, Travis E.	Fr. A&S	Glendale
Rao, Frank J.	Law I	San Jose
Raspo, Robert N.	Fr. B.A.	Stockton
Ray, Charles R.	Soph. A&S	San Mateo

Ray, Johnny L.	Ev. B.A.	San Jose
Reasonover, Thomas C.	Law I	Santa Clara
Recchio, Sandro J.	Soph. B.A.	San Jose
Redlich, Paul B.	Soph. A&S	Phoenix, Arizona
Reed, Charles W.	Jun. B.A.	Santa Clara
Regan, Willard P., Jr.	Sen. A&S	Hemet
Regan, William V.	Fr. A&S	Menlo Park
Reginato, Louis L.	Soph. Engr.	San Francisco
Reiche, Walter	Fr. Engr.	Guatemala, Central America
Reichmann, Frank J.	Jun. B.A.	Everett, Washington
Reilly, Gerard E.	Ev. B.A.	Santa Clara
Reilly, Michael A.	Fr. Engr.	San Jose
Relvas, James W.	Fr. B.A.	Folsom
Renault, Pierre M.	Sen. A&S	San Mateo
Regifo, J. Mario	Soph. Engr.	San Salvador, El Salvador
*Rice, Bernard B.	Soph. A&S	San Francisco
Rice, Michael L.	Ev. B.A.	Santa Clara
Riebli, Ronald A.	Fr. Engr.	Penngrove
Riopel, Dennis P.	Soph. B.A.	San Jose
Riordan, Raymon C.	Soph. Engr.	Arcadia
Rishwain, Raymond J.	Soph. A&S	Stockton
Roach, Richard L.	Soph. B.A.	North Sacramento
Roach, Robert M.	Jun. Engr.	Redwood City
Roberts, Charles A.	Ev. B.A.	Santa Clara
Roberts, Gerald A.	Sen. Engr.	San Carlos
Roberts, Harold J.	Ev. B.A.	San Jose
Roberts, Laurence K.	Fr. A&S	Los Altos
*Robin, Richard A.	Jun. A&S	San Francisco
Robinson, Michael L.	Fr. A&S	Los Angeles
Robinson, Ruth H.	Ev. B.A.	Salinas
Robles, Flavio E.	Jun. Engr.	San Jose
Rocha, John J.	Soph. B.A.	San Francisco
*Roche, Randall H.	Soph. A&S	Menlo Park
Rockstroh, William J.	Ev. B.A.	Santa Cruz
Rodgers, Robert C.	Ev. B.A.	Los Altos
Rodman, Cathleen J.	Ev. B.A.	Mountain View
Roeder, Aurelio O.	Fr. B.A.	Trujillo, Peru
Roeder, Raymond L.	Fr. Engr.	Miranda
Roffoni, John A.	Jun. B.A.	Guadalupe
Rogers, Louis A.	Fr. B.A.	Lakewood
Rokovich, Anthony J.	Ev. B.A.	Santa Clara
Rolla, Philip M.	Soph. Engr.	Madrone
Romano, William J., Jr.	Sen. A&S	San Jose
Rooney, John P.	P/T Engr.	Palo Alto
Rooney, Paul B.	Jun. B.A.	Portland, Oregon
Rooney, Peter M.	Jun. A&S	Sacramento
Rose, Carol A.	Ev. B.A.	Irvington
Rosellini, John M.	Fr. B.A.	Olympia, Washington
Royere, Joseph P.	Soph. B.A.	Temple City
Rudolph, David M.	Sen. B.A.	Pacific Grove
*Ruffner, Warner J.	Spec. A&S	San Jose
Ruffo, Anne L.	Ev. B.A.	San Jose
Ruggieri, Dominic J.	Sen. Engr.	San Leandro

Ruocco, Vincent R.	Jun. B.A.	Berkeley
Russell, John K.	Fr. A&S	Atherton
Russi, James F.	Soph. Engr.	San Francisco
Russi, Melvin F., Jr.	Soph. A&S	San Francisco
Ryan, Philip S.	Fr. A&S	San Francisco
Ryan, William H.	Jun. A&S	Edmonds, Washington
Sachs, Lester G.	Law II	Santa Clara
Salas, Anthony V., III	Fr. B.A.	North Hollywood
Salfen, Dion R.	Fr. Engr.	Los Gatos
Samuelson, James P.	Fr. B.A.	Arcadia
Sanbrook, John S.	Law II	Los Gatos
Sandberg, Verneice C.	Ev. B.A.	Palo Alto
Sanders, Donald L.	Ev. B.A.	San Jose
Sandersfeld, John G.	Fr. Engr.	Los Gatos
Sandin, Thomas R.	Soph. Engr.	Tucson, Arizona
Sands, Roger W.	Ev. B.A.	Los Altos
Sanfilippo, Don S.	Sen. B.A.	San Jose
Sanford, Vell C.	Ev. B.A.	Santa Clara
Sanguinetti, Richard B.	Law II	San Jose
Sans, Edward W.	Ev. B.A.	Santa Clara
Sapone, John J.	Ev. B.A.	Campbell
Saponito, Carol A.	Ev. B.A.	Santa Clara
Sauer, Michael T.	Jun. A&S	Los Angeles
Saunders, Frank W.	Law III	San Jose
Savage, William B.	Fr. A&S	Oroville
Savant, Donald E.	Jun. Engr.	Oakland
Scales, Wallace W.	Ev. B.A.	Palo Alto
Scanlon, Ronald J.	Sen. Engr.	San Leandro
Schaefer, Thomas E.	Sen. A&S	Leonia, New Jersey
Schafer, Paul W.	Jun. B.A.	North Hollywood
Schechtel, Lawrence P.	Jun. A&S	Oswego, Oregon
Scheid, David P.	Fr. B.A.	Campbell
Scheid, Robert J.	Jun. B.A.	Campbell
Scheley, Lloyd T., Jr.	Jun. A&S	San Francisco
Schirle, Bertram F.	Ev. B.A.	San Jose
Schirle, Robert C.	Ev. B.A.	San Jose
Schleich, Walter C.	Sen. B.A.	Palo Alto
Schmid, Frank R.	Sen. Engr.	San Francisco
Schmidt, Arthur R.	Jun. A&S	North Hollywood
Schmidt, Ronald H.	Soph. A&S	San Jose
Schmiederer, James F.	Fr. A&S	Burbank
*Schmitt, Robert L.	Jun. A&S	San Jose
Schneck, Thomas, Jr.	Fr. A&S	Santa Clara
Schott, Stephen C.	Soph. B.A.	Santa Clara
Schraeder, James N.	Fr. Engr.	West Sacramento
Schreckenghaust, James H.	Ev. B.A.	Palo Alto
Schreiner, Robert W.	Ev. B.A.	Santa Clara
Schroder, William G.	Soph. B.A.	San Francisco
Schroer, Bernard A.	Soph. Engr.	San Francisco
Schwabe, Paul E.	Fr. B.A.	Portland, Oregon
Schwafel, Gerald E.	Ev. B.A.	Cupertino
Schwafel, Pauline B.	Ev. B.A.	San Jose
Schwartz, James E.	Fr. B.A.	Dallas, Texas
Schwartz, William J.	Sen. B.A.	San Jose

Schweizer, William C.	Ev. B.A.	San Jose
Scoville, Bernard E.	Soph. A&S	Riverside
Scribante, Robert P.	Soph. Engr.	San Mateo
Seagrave, James F.	Soph. A&S	San Francisco
Seger, Julianne	Ev. B.A.	San Jose
Segurson, James P.	Soph. Engr.	San Francisco
Sehorn, Raymond W.	Soph. A&S	Willows
Seidl, Margaret J.	Ev. B.A.	San Jose
Sekigahama, Tadashi	Ev. B.A.	Newark
Selb, L. Wellington	Law I	Santa Clara
Sellars, Nixon J.	Sen. A&S	Boise, Idaho
Semans, William L.	Sen. A&S	Fullerton
Senasac, Dolph C.	Sen. A&S	San Mateo
Shannon, George M., Jr.	Jun. A&S	Santa Clara
Sharkey, Miles A.	Jun. Engr.	Fullerton
Shaughnessy, William E.	Ev. B.A.	Mountain View
Shea, Michael A.	Fr. A&S	San Jose
Shea, Michael M.	Jun. A&S	Seattle, Washington
Shea, Patrick E.	Soph. A&S	Los Gatos
Sheaff, Joseph L., Jr.	Soph. B.A.	Orinda
Sheela, John F.	Soph. Engr.	Porterville
Sheerin, Roger H.	Soph. B.A.	Millbrae
Shellooe, Daniel P.	Fr. A&S	Salinas
Shellooe, William R.	Jun. Engr.	Salinas
Shepherd, John H.	Soph. Engr.	Stockton
Sherman, Richard J.	Fr. Engr.	Sacramento
Sherrell, Lyle T.	Ev. B.A.	Agnew
Shields, Charles J.	Ev. B.A.	Palo Alto
Shields, Terrence T.	Jun. Engr.	Auburn
*Shinney, Robert J.	Spec. A&S	El Cerrito
Shirley, Alvin L .	Ev. B.A.	Mountain View
Shreve, David C.	Fr. Engr.	Vallejo
Siegfried, Richard A.	Fr. Engr.	Woodside
Silva, Donald E.	Sen. Engr.	Ewa, Hawaii
Silva, Robert J.	Fr. Engr.	Los Banos
Silvano, John L.	Fr. Engr.	Oakland
Simon, Richard D.	Sen. Engr.	Oakland
Simoni, Richard A.	Jun. B.A.	San Jose
Singewald, George L., Jr.	Soph. B.A.	San Jose
Singleton, James K.	Fr. A&S	San Lorenzo
Sins, Edward C.	Jun. Engr.	San Francisco
Siri, Gail B.	Sub.-Sen. A&S	Redwood City
Slavin, Vincent M.	Ev. B.A.	Sunnyvale
Smeltzer, Frederick A.	Law II	Monterey
Smith, Everett W.	Sen. B.A.	Glendale
Smith, Gary N.	Soph. A&S	Pacific Grove
Smith, Hugh E.	Ev. B. A.	Sunnyvale
Smith, James N.	Fr. B.A.	Lafayette
Smith, Jerome A.	Sen. A&S	San Jose
Smith, Kevin B.	Fr. B.A.	San Francisco
Smith, Patricia K.	Nrs. A&S	Watsonville
Smith, Richard F.	Ev. B.A.	San Jose
Smith, Robert J.	Law II	Santa Clara
Smith, William J.	Jun. B.A.	San Mateo

Sneed, Jay P.	Ev. B.A.	San Jose
Snider, Lester A.	Ev. B.A.	Campbell
Snyder, David M.	Sen. B.A.	Los Angeles
Sobrato, John A.	Soph. B.A.	Menlo Park
Sobrero, Frank C.	Soph. B.A.	Oakland
Soderberg, Jerry P.	Soph. B.A.	Eureka
Soher, Thomas J.	Sen. B.A.	San Francisco
Solus, June W.	Nrs. A&S	Montague
Somavia-Moore, Louis C.	Soph. A&S	Salinas
Sordello, Frank J.	Jun. Engr.	San Jose
Sorem, Joel D.	Sen. Engr.	Ventura
Sorem, Nelson B.	Jun. Engr.	Ventura
Sorensen, Donald N.	Fr. Engr.	San Jose
Soriano, Frank J.	Sub.-Sen. B.A.	Los Banos
Sorich, Robert M.	Ev. B.A.	Menlo Park
Souden, Raymond C.	Ev. B.A.	San Jose
Sousa, Frank A.	Soph. A&S	Sacramento
South, Charles D., III	Jun. A&S	Santa Clara
Southwick, Frank J.	Ev. B.A.	San Jose
Spadafore, James C.	Law I	San Jose
Spano, Salvatore R.	Jun. A&S	Campbell
*Specht, Joseph E.	Soph. A&S	San Jose
Spencer, Samuel R.	Jun. Engr.	Fresno
*Spinetta, John J.	Fr. A&S	San Francisco
Standring, Gayle E.	Nrs. A&S	San Jose
Stanich, Joseph R.	Ev. B.A.	Sunnyvale
Stansbury, John F.	Fr. B.A.	La Canada
Starbird, Judith H.	Ev. B.A.	Santa Clara
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Steidlmayer, Louis F.	Fr. B.A.	Colusa
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